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UNIVERSITY OF PENNSYLVANIA

University Lectures

DELIVERED BY MEMBERS
OF THE FACULTY IN THE

Free Public Lecture Course

1917–1918

Vol. V

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NATHAN HATFIELD, '63
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PREFACE

It is a real pleasure to submit this fifth volume of Public Lectures, delivered by members of the Faculty of the University of Pennsylvania. The hearty reception accorded the four preceding volumes is responsible for this pleasure. In offering the present volume there is a well founded assurance that the material, presented in the several lectures, will prove of interest and profit. The authors have given their subjects careful thought and have refrained from presenting anything but what may be regarded as fully established by careful investigation.

The continued generosity of Henry R. Hatfield, Esq., Class of '78, has again rendered a prompt publication of the volume possible. Its dedication to his brother, Nathan Hatfield, '63, is most proper, as he was a keen and profound student, deeply interested in the educational work of his University.

THE ENGLISH VERSION OF THE BIBLE

By Josiah H. Penniman

Vice-Provost of the University and Professor of English Literature

On the table before you are a number of books, each of which is a translation of the Bible, of the Old Testament, or of the New Testament. They are all on sale today in the book stores of Philadelphia, except this work in four volumes which is now rare. It is the remarkable translation of the whole Bible from the Greek, made by Charles Thomson, who was a tutor in this institution from 1750 to 1755, receiving the degree of A.M. He was Secretary of the Continental Congress during the Revolution.

Why are there so many translations?

Before answering this question it is necessary to state that these translations differ from each other in many passages, not only in the English words and phrases chosen to represent the meaning of the text of which they are respectively translations, but also in regard to the texts.

1. Their contents are not identical as to books.
2. They differ in the texts, where the constituent books are the same.
3. They differ in point of view, where the originals are the same.
4. They differ in kind and quality of English, where the contents are identical as to books, where the texts are the same, and where the point of view is the same.
5. They differ in the meanings attached to particular words.
6. They differ in mechanical and literary arrangement, where the contents are identical.

The English Bible, now accessible to the modern reader in many versions, is the result of scholarly work done by earnest men through the course of more than six centuries. Every

version has represented a step toward the complete clothing in English of the thoughts of ancient writers. Itself a collection of what, in many cases, we must regard as composite books, the Bible now appears in English in a composite translation. To the original, as to the translation, there were many contributors in many different centuries. To the authors and editors we may ascribe the single-hearted purpose to preserve for future generations the record of the wonderful dealings of Jehovah with his children, and particularly with the chosen people, and to the translators likewise we may ascribe the single-hearted purpose to make accessible to men of English tongue, the treasure-house of wisdom and beauty of the records of the ancient Jews, the great Teacher, and the early groups of his followers.

Taking it for granted that you are familiar with the stories of Wyclif, Tindale, Coverdale, and the other early translators of the Bible into English, it is the purpose of the lecturer to devote the time at his disposal to a discussion of some of the less familiar facts concerning English versions. The length and general structure of Bible sentences is, of course, determined by the original, but the English that we are familiar with as "Bible English" was the language of the people, or the vernacular, as spoken by educated men and therefore free from the inaccuracies and vulgarisms of the ignorant and also from the pedantry of the scholar and the affectation of the court.

The title-pages of the modern English versions of the Bible, with the exception of the "Douay" Version, usually state that they are translations from the original tongues. A modern copy of the latter (published by John Murphy Co., Baltimore and New York) states that it is "translated from the Latin Vulgate, compared with the Hebrew, Greek, and other editions in divers languages."

The Old Testament, with the exception of a few passages, which are in Aramaic, is in Hebrew. The New Testament is in Greek. These are the original languages.

The conquests of Alexander spread the knowledge of Greek

in the East, and in cities like Alexandria, great and populous, were many Jews who adopted the language as their own. In the time of Jesus the conquests of Rome had brought Latin into the East where it became the language of the government. At the Crucifixion, the inscription placed on the cross was "in Hebrew and in Latin and in Greek" (John XIX, 20). It was but natural that books held in such reverence by the Jews should become known to others, and a Greek translation of the Old Testament was sure to be made. Special reasons for it existed at Alexandria, that being a great center of Greek learning and the seat of a famous library. There had been Jews in Egypt for centuries before the time of Alexander, who, when he founded Alexandria (332 B. C.), recognized the loyalty and courage of a race, representatives of which had fought in his armies, by setting apart in the new city a special place for Jewish colonists, whom he admitted to full citizenship.

They were later allowed to transform an Egyptian temple at Leontopolis into a Jewish temple, and to celebrate Jewish rites there until the coming of the Romans ended it. An idea of the wide dispersion of the Jews and also of their loyalty to their religion and to Jerusalem its center, is given in the opening of the second chapter of Acts. A Greek version of the Old Testament was in circulation in the time of Jesus. The story of how this version came into existence is told in an ancient letter of Aristeas to Philocrates. This letter was quoted by Aristobulus, and Philo, and by Josephus, the historian of the Jews. We know, therefore, that the letter was in existence as early as the first century A. D.

Aristeas says that the Greek translation of the Old Testament was made by order of Ptolemy Philadelphus (285-246 B. C.) at the suggestion of Demetrius Phalereus, librarian of the royal library at Alexandria. An embassy was sent to Eleazar the High Priest, at Jerusalem, with the request that he send to Alexandria with a copy of the Hebrew Law, six elders from each of the twelve tribes of Israel to make a translation for the royal library. Philo states that the anniversary of the completion of the translation was celebrated

yearly. This story, which is, for many reasons, of doubtful accuracy and authority, is quoted by early Christian writers as authority, and an interesting variant of the story makes the number of translators seventy, instead of seventy-two, and states that they worked independently, each in a separate cell, and that when they compared their work, on its completion, every copy agreed with the others. What we are sure of is that a translation of the Old Testament into Greek was made, beginning probably with the Pentateuch in the time of Philadelphus and completed in later years by different hands. This Greek version came to be known as the Septuagint (Latin, Septuaginta) commonly written LXX, and is referred to in Ancient Greek manuscripts as the version "according to the Seventy."

Jerome, whose name is associated with the Latin version of the Bible, doubts the story of the cells and says Nescio quis primus auctor LXX cellulas Alexandriæ mendacio suo exstruxerit.

Jerome, in Book II of his Apology for Himself Against the Books of Rufinus, 402 A. D. (Nicene and Post Nicene Fathers, Vol. III, p. 516-17), mentions important differences in text between different Greek Versions of the Old Testament, and differences between the Greek Versions and the Hebrew text.

We are concerned with the Septuagint in this lecture only so far as it contributes one of the early sources of our text of the Old Testament, for the most ancient texts of it that we possess are in Greek. The Old Testament of the early Christian Church was in Greek, not in Hebrew, and quotations in the New Testament are from the Greek version. We have no copies of the Old Testament in Hebrew earlier than the ninth century. Of Greek manuscripts the most important are:

The Codex Sinaiticus, of the fourth century, found in 1859 in the Convent of St. Catherine on Mount Sinai, and now in the Imperial Library in Petrograd.

The Codex Vaticanus, brought to Rome in 1448 and believed to have been copied in Egypt in the fourth century.

The Codex Alexandrinus sent in 1628 by the Patriarch of Constantinople to Charles I as a gift. It was probably made at Alexandria in the fifth century, and since 1753 has been in the British Museum.

The Ephraem manuscript now in the National Library in Paris belongs also probably to the fifth century.

The Manuscript of Beza, so called because once owned by that scholar, was presented by him to the University of Cambridge in 1581. It is generally referred to the sixth century. It is remarkable as being the earliest to contain John VII, 53-VIII, 11.

These manuscripts, and the hundreds of others of a more or less fragmentary character, are the oldest versions we have of any parts of the Bible, either Old Testament or New, probably the very oldest fragment being a little piece of Papyrus of the third century found in 1896-7 at Oxyrhynchus and now in the University of Pennsylvania Museum. It contains several verses of the First Chapter of Matthew and was published with the other Oxyrhynchus Papyri.

The discovery of additional manuscripts often throws light on the text, and it will be noticed that most important manuscripts have come to our knowledge since the completion of the King James Version in 1611. In addition to the Hebrew and Greek sources of the text of the Bible, we have also manuscripts of various ages, of a fifth century Armenian translation of the whole Bible, a portion of a Gothic version made by Wulfilas in the fourth century, of several different Egyptian (Coptic) versions of parts of the Bible, of an Ethiopic version and a Syriac version. All of these, as well as early quotations from it, are important as indicating what the contents and text of the Bible were regarded as being. The Syriac version for example omits the Apocrypha.

Just as the conquests of Alexander and the spread of Greek language and learning throughout the East resulted in Greek versions of the Old Testament, so the Roman conquests spread the Latin language, and, of course, a Latin version was inevitable. The oldest Latin version, which was known to Ter-

tullian, Cyprian, Augustine, Jerome and others of the Fathers, was probably made in the second century from the Septuagint, and there appear to have been different varieties of the text. Augustine commends the Itala, and there were also an African, and some European versions. The oldest form of Latin version is, in the opinion of critics, the African. Portions of the Latin versions are still in existence in about forty manuscripts. It was the lack of uniformity in the early Latin versions that led Damasus, Bishop of Rome, to commission Jerome, a Dalmatian, to prepare a Latin translation of the Psalms and Gospels. He finished this work and the New Testament on the basis of Greek texts. A short time later, Jerome revised his Psalter on the basis of Origen's work. Origen (184-254 A. D.) edited a Tetrapla or four-text and later a Hexapla or six-text Bible, of which we have only fragments left us, chiefly in quotations in the works of the Church Fathers. Origen arranged in parallel columns: 1, the Hebrew text; 2, the Hebrew text in Greek letters; 3, a Greek version of the Hebrew Scriptures by Aquila; 4, a Greek version by Symmachus; 5, the Greek version of the Septuagint; 6, a Greek version by Theodotion.

Jerome devoted himself for fourteen years (390-405), at Bethlehem, to the study of Hebrew directly into Latin.

At the request of several bishops, he translated also the books of Judith and Tobit, which a friend of his translated from Aramaic into Hebrew for him. He then translated the Hebrew version, though he regarded as canonical only the ancient Hebrew books. Opinion was divided in the early church as to the Apocrypha. Not until 1442, at the Council of Florence, was any formal decision made on the subject by the Church, which then accepted all but 1 and 2 Esdras and the Prayer of Manasseh.

The whole Bible, as translated into Latin by Jerome, was known as the Vulgate (vulgata), meaning that it was in the language of the people. It is interesting to note that in Latin Bibles until 1566 Jerome's version of the Psalms known as the Roman Psalter was retained, his later version known as the

Gallician Psalter replacing it in that year. The third or "Hebrew" Psalter of Jerome never became generally used. This retention of an older translation reminds us of the history of the Psalter in the English Prayer Book. There were, of course, many versions and variants of the Latin Bible, and, owing to the Reformation, it was necessary for the Roman Catholic Church to fix upon a text that should be standard. The Council of Trent decreed in 1546 that the Vulgate edition be held as authentic. This included most of the books commonly known as the Apocrypha, which thus received the formal sanction of the Catholic Church as canonical. A particular edition of the Vulgate was designated, and, after that of Pope Sixtus X had been found unsatisfactory, one issued by Clement VIII was by Papal Bull of 1592 declared to be standard. No word of it is permitted to be altered. The action of the Council of Trent, in 1546, in regard to the Vulgate was reaffirmed by the Ecumenical Council of the Vatican in 1870. A commission appointed by the Pope has for some years been at work on a revision of the Vulgate, not yet completed.

No translation of the Vulgate into any language has ever been authorized by the Roman Catholic Church, but any translation of the Vulgate may be read by Catholics provided the translation has first been approved by the proper Church authority. The "Douay Bible," on the table here, has been approved by Cardinal Gibbons and Cardinal Farley.

The Septuagint, the Vulgate, the Protestant, and the Roman Catholic versions in English are interesting not only historically, because of their relations to each other, as versions of still more ancient writings, but also because of certain important differences in their contents. As a result of the decree of the Council of Trent, 1546, reaffirming action of the Council of Florence in 1442, certain books concerning which there were differences of opinion within the Christian Church were declared to be canonical. Protestants did not regard these books as canonical, or inspired, but did regard them as valuable for their teachings, and they were therefore com-

monly printed in Protestant English versions, but in a collection by themselves, between the Old Testament and the New. For many years they have commonly not been printed at all in Protestant versions.

The omission of the Apocrypha from most of the editions of the Protestant English version dates from about 1830, and is the result of a controversy in 1826 in the British and Foreign Bible Society, some members of which objected to circulating with the Canonical Books others which, although approved by many Protestant bodies, as suitable for information and "instruction of manners," were not regarded as inspired.

This collection is designated the Apocrypha, a name given to it by Jerome to distinguish these books from the Hebrew books accepted by the Palestinian Jews. The Jewish Scriptures, which the early Christian Church accepted as inspired, consisted of three separate collections: the Law, the Prophets, and the Sacred Writings. The most sacred of these was "The Law," consisting of the Five Books of Moses, commonly called the Pentateuch. Next in importance was "The Prophets," a collection which included the old historical books of Joshua, Judges, Samuel, Kings, Isaiah, Jeremiah, Ezekiel, and the twelve "Minor Prophets," Hosea, Joel, Amos, Obadiah, Jonah, Micah, Nahum, Habakkuk, Zephaniah, Haggai, Zechariah, Malachi. The third collection, "The Holy Writings," or Hagiographa, as the Septuagint calls it, comprised Ruth, Psalms, Job, Proverbs, Ecclesiastes, Song of Songs, Lamentations, Daniel, Esther, Ezra, Nehemiah, and Chronicles.

The Books of Samuel, Kings, Ezra-Nehemiah and Chronicles are now divided into two books each. Jerome calls them "double" books. The Geneva Bible says of Nehemiah: "This book is also called of the Latines the Second of Ezra, because he was the writer thereof." The Minor Prophets were included in one book, so that where we count thirty-nine books in the Old Testament, the Jews counted twenty-four.

Among Jewish scholars in the early Christian centuries were differences of opinion as to the inclusion of Esther among the

Sacred Books, and some would have included the Wisdom of Jesus, Son of Sirach. The oldest list we have of Old Testament books is that of Melito, Bishop of Sardis, who names all the books in the Protestant Old Testament except Esther.

These three collections were referred to by their names several times in the New Testament, "Moses" being used sometimes when the "Law" was meant. Examples of this are "This is the Law and the Prophets" (Matthew VII-12), "If they hear not Moses and the Prophets" (Luke XVI-31). "Psalms" in the third collection was probably used as the designation of that collection (Luke XXIV-44) "All things must be fulfilled which were written in the Law of Moses, and the Prophets, and the Psalms concerning me."

To Esther and Daniel additions appear in the Greek version and these additions, not accepted by the Palestinian Jews, though probably accepted by the Alexandrian Jews, are found in the Apocrypha.

The Apocrypha, as printed separately in Protestant English versions, consists of the following books: 1 and 2 Esdras, Tobit, Judith, Esther (additional chapters), Wisdom of Solomon, Wisdom of Jesus the Son of Sirach (Ecclesiasticus) Baruch, Song of the Three Holy Children, History of Susanna, Bel and the Dragon (additional chapters of Daniel), Prayer of Manasseh (referred to in 2 Chronicles XXXIII, 19), 1 and 2 Books of The Maccabees.

These and other books are of later origin than the Hebrew Scriptures, but were evidently written in imitation of them, some in Hebrew or Aramaic and others in Greek. They all ultimately appeared in a Greek form and found their way into the Greek version of the Hebrew Scriptures, among the Alexandrian Jews, and in this way were received by the early Christian Church, in which, however, there were differences of opinion concerning the value and authority of them.

We have seen that the Council of Trent, 1546, declared that all included in the Vulgate was to be accepted as canonical, so we find these books, except the Books of Esdras and the Prayer of Manasseh in the "Douay" English version, not

in a separate group, but distributed among the other books, and with the Song of the Three Holy Children, the story of Susanna and the story of Bel and the Dragon included in the Book of Daniel, and the extra chapters appended to the Book of Esther.

In the Larger Catechism of the Russian Greek Church, 1839, the Apocrypha is not included among canonical books, because "they do not exist in Hebrew."

With regard to the Canon of the New Testament, there is no difference between the versions. Here there was no collection of ancient writing to be adopted, whole, or with exceptions, by the early Christian Church. By a gradual process of acceptance and approval the New Testament came into existence as the authoritative fundamental book of Christianity. Of the twenty-seven books which it contains a few were accepted finally only after long discussion. Books which for a time were read in churches, but which were never regarded as inspired, were the Clementine Epistles, the Epistle of Barnabas, and the Shepherd of Hermas. There existed also other books such as the Apocalypse of Peter, Epistle to the Laodiceans, Acts of Paul, and many so-called Gospels. These books, not included in our New Testament, have been collected in modern times in the Apocryphal New Testament. The first Epistle of Clement and part of the second are found in the Codex Alexandrinus, as are also Wisdom of Solomon, Ecclesiasticus, additions to Esther, Daniel and Ezra, Judith, Tobit, Baruch, Letter of Jeremiah, the books of the Maccabees, the Prayer of Manasseh and, probably at one time, the Psalms of Solomon, as the list of its contents indicates. The Codex Vaticanus does not include the books of the Maccabees, the Prayer of Manasseh or the Psalms of Solomon.

Of the various early lists of writings permitted to be read in churches, that of Athanasius is the earliest to include the present twenty-seven books of the New Testament. Other early lists vary in regard to Hebrews, James, Jude, 2 Peter, 2 and 3 John, and Revelation.

The Law, the Prophets, and the Sacred Writings, those

collections which constitute the Scriptures of the Jews, constitute likewise the Old Testament as it appears in the Protestant English versions. As the Hebrew books were on separate rolls, the order of them was not determined. Of course, the Law (in Hebrew, one book of five parts) and also the "Former Prophets" Joshua-Kings were in chronological order, but among the "Latter Prophets" Jeremiah, which is connected with the close of Kings, sometimes is put first. Some such reason probably explains the appending of the letter introducing Phoebe, as Chap. XVI of Romans. In the Sacred Writings, we have a miscellaneous lot of books, the order of which was not important and therefore varied in the lists. This three-fold collection is referred to as early as 170 B. C., for we read in the Wisdom of Jesus (Ecclesiasticus, Prologue) "My grandfather, Jesus, had much given himself to the reading of the law, and the prophets, and other books of our fathers, etc.," and about that time in the persecution by Antiochus "sacred books" of the Jews were burnt and possessors of a copy of the Book of the Covenant were put to death.

When the collections were made, we do not know, but "the book of the Law" existed early, as we read that Joshua (Joshua VIII, 32-35) read from that book to the people.

Jehoshaphat appointed men to teach the Law to the people (2 Chronicles XVII, 7-9), and Ezra read to the people from the book of the Law of Moses (Nehemiah XIII). In the reign of Josiah a copy of the Law was found by Hilkiah the Priest (2 Chronicles, XXXIV-14).

We do not know that this book so often referred to was our Pentateuch, as we have it, but it seems certain that our Pentateuch includes what is in these passages called the Law of Moses. It is thought that the following statement, in 2 Maccabees II, 13, 14, has reference to the preservation of the collections which do now constitute the old Testament:

"The same things also were reported in the writings and commentaries of Neemias; and how he [Neemias] founding a library gathered together the Acts of the Kings, and the

Prophets, and of David, and of the Epistles of the Kings, concerning the holy gifts."

"In like manner also Judas [Maccabæus] gathered together all those things that were lost by reason of the war we had, and they remain with us."

It has been suggested that the Hebrew Sacred Books were all lost during the Babylonish captivity, and a tradition that their preservation and transmission were due to Ezra is found in the late Apocryphal book, Fourth Book of Esdras (2 Esdras of the Apocrypha), probably 100 A. D., where it is stated, Chapter XIV, 43-48, that Ezra from memory, with the aid of five skillful scribes, produced, in a forty-day period, ninety-four (Syr. Eth. Arab, Arm. versions, the reading "two hundred and four") books, of which twenty-four, the Hebrew Scriptures, were to be published openly and the remaining seventy kept for "such as be wise among the people." This story is connected with another tradition, probably equally without foundation in fact, that Ezra and a group of learned men known as the "great synagogue," or Assembly, connected with the Second Temple, after the return from Babylon, 520 B. C., collected and edited the Hebrew Sacred Scriptures.

The third century, B. C., seems to be the period at which the Jewish collections were closed, and soon after that period we find them beginning to appear in the Greek translation. The Hebrew Scriptures, taken as a whole chronologically, began with Genesis and closed with Chronicles, and this may explain the reference in Matthew XXIII, 35, "from the blood of Abel (Genesis IV, 8) unto the blood of Zacharias" (2 Chronicles XXIV, 21).

A comparison of the contents of the Protestant and Catholic versions of the English Bible shows how great differences of opinion have existed, and still exist, concerning what books should be included in the Old Testament. The Catholic version gives to the modern reader the Vulgate. The Protestant version gives only such Old Testament books as exist in Hebrew and were approved generally by the Palestinian Jews as their "Scriptures."

Certain differences in these English versions are noticed in the names given to the same books. Chronicles is called Paralipomenon, and Zephaniah appears as Sophonias in the "Douay" Bible. In the New Testament we have quotations from thirty of the books of the Hebrew Old Testament, but no quotation from any of the books of the Apocrypha by name or as authority. There is in Jude, verse 14, "Enoch, the seventh from Adam, prophesied, saying, Behold, the Lord came with ten thousands of his holy ones," a quotation from Enoch I, 9:

"And behold! He cometh with ten thousands of (His) holy ones
To execute judgments upon all,
And to destroy (all) the ungodly;
And to convict all flesh
Of all the works (of their ungodliness) which they have ungodly committed,
(And of all the hard things which) ungodly sinners have spoken against Him."

According to Origen (De Principiis III, ii, 1), Jude cites in verse 9 another book, The Assumption of Moses:

"But Michael the Archangel, when contending with the devil he disputed about the body of Moses, durst not bring against him a railing judgment, but said, the Lord rebuke thee."

There is no such story in the Canonical books, but it was evidently well known in the time of Jude.

As the Rheims-Douay version follows the Latin in text it differs in places from the Protestant versions, as the Latin text differs from the Hebrew or Greek. This is true not only of readings which give different meanings, as in Psalms XXIX-9 (Rheims-Douay, Psalms XXVIII-9), where the Protestant version reads, "The voice of the Lord maketh the hinds to calve," and the Rheims-Douay, "The voice of the Lord prepareth the stags," but it is also true concerning the inclusion and omission of passages, an example of which is the ascription at the close of the Lord's Prayer, Matthew VI, 13, which the Rheims-Douay, following the Vulgate, omits, and

which the Revised Version omits, but states that ancient versions differ in this place. The King James Bible retains it. The Revised Version omits I John V, 7, "For there are three that bear record in heaven, the Father, the Word, and the Holy Ghost; and these three are one." The Rheims-Douay includes that verse from the Vulgate. The King James Version also includes it.

In Psalm XIV (Psalm XIII, Douay), the Vulgate, and, consequently, the Rheims-Douay Version, have several additional verses, not found in Hebrew, and not found in any version in Psalm LIII (Psalm LII, Douay), which is the same Psalm repeated. The extra verses are to be found in the old version of the Psalter retained in The Book of Common Prayer.

In the Familiar Song of the Heavenly Host (Luke II, 14) the versions, owing to manuscript differences, vary as follows:

"Glory to God in the highest, and on earth peace, good will toward men."—King James Version.

"Glory to God in the highest and on earth peace among men in whom He is well pleased."—Revised Version.

"Glory to God in the highest and on earth peace to men of good will."—Rheims-Douay.

The position was taken by the Rheims translators that since there are no English equivalents for many words it is better to transfer them to the English text, in the hope that they will become familiar and intelligible, than to represent them by words which give only a part of the meaning, or which substitute another meaning for that of the original. "Againe, if Hosanna, Raca, Belial, and such like be yet untranslated in the English Bibles, why may we not say Corbana and Parasceve; specially when they, Englishing this later thus, the preparation of the Sabbath, put three words more into the text then the Greek word doth signifie. Mat. XXVII, 62." Owing to the fact that there had been a number of English versions earlier than that of Rheims and that, except for the brief reign of Mary, 1553-1558, the English since the time of Henry VIII have been through their State Church and through the re-

ligious affiliations of the great majority of the people, a Protestant nation, the Roman Catholic translation never became very widely read.

"When we compare chapter after chapter the translation of Rheims with the earlier versions, we are struck more by their resemblances than their differences. We feel that, in spite of the hostile attitude which it thought fit to assume towards them, it is lineal descendant of the versions which preceded it, and well entitled to take an honorable place in the connected series of English Bibles." (James G. Carleton. The Part of Rheims in the Making of the English Bible, p. 20.)

In 1609 appeared "THE HOLY BIBLE FAITHFULLY TRANSLATED INTO ENGLISH out of the Authentical Latin: diligently conferred with the Hebrew, Greek and other Editions in divers languages; with Arguments of the Bookes, and Chapters, Annotations, Tables, and other helps for better understanding of the text, for the discoverie of Corruptions in some late translations, and for clearing Controversies in Religion; by the ENGLISH COLLEGE OF DOUAY, Printed at Douay, by Lawrence Kellam, at the signe of the Holie Lambe, 1609."

This was in two volumes, containing only the Old Testament. The whole Bible in the Rheims-Douay version was published complete in 1633-35, at Rouen.

The King James version of 1611 was in preparation, and it is likely that this fact had something to do with the issuing of the Douay translation in 1609-10. In 1589, William Fulke, a Protestant, published the Rheims New Testament and the Bishop's Version in parallel columns, with the Rheims notes alternating with replies to them. He termed the Rheims Version "The text of the New Testament of Jesus Christ, translated out of the vulgar Latin by the Papists of the traiterous seminarie at Rhemes." "Fulke's folio (reprinted in 1601, 1617 and 1633) was regarded for over forty years as a standard work on the Protestant side, and probably every reviser of the New Testament for the version of 1611 possessed it."

A careful revision of the Vulgate, of which Cardinal Allen

was one of the editors, appeared in 1598, and was recognized by Pope Clement VIII as authoritative. The Rheims New Testament of 1582, with slight changes in the text, and with increased and rearranged notes, was reissued in 1600 at Antwerp. The translation of the Old Testament, finished in 1582, but not printed until 1609, was made to accord with the text of the new authentic Vulgate. A third edition of the New Testament, at Antwerp, was issued in pocket size, showing probably an increase in the number of its Catholic readers. As Ireland was mostly Catholic, and as the older editions were difficult to understand, a new translation of the New Testament, from the Vulgate, was made by a priest, Father Nary. This was approved and published, 1719, in Dublin. A fourth new version of the New Testament, in English, was published in 1730. It was by Robert Witham, the head of the Seminary at Douay. The most important revision, however, was by Richard Challoner, a Douay scholar, who, in 1749, issued the New Testament, and in 1750 the whole Bible, which he continued to revise until 1777. A revision of Challoner's New Testament in 1781 by Father McMahon, followed in 1791 by the whole Bible in English, for Catholics, under the approbation of Archbishop Troy, of Dublin, is sometimes known as Troy's Bible.

Cardinal Newman said of Challoner, that in the Old Testament his work was "little short of a new translation, nearer to the Protestant than it is to the Douay," and "at this day the Douay Old Testament no longer exists as a Received Version of the Authentic Vulgate."

In 1851 Archbishop Kenrick, of Philadelphia, completed a revision of the New Testament, and in 1862 the whole Bible, with a preface and notes critical and explanatory. For the Old Testament Challoner's text is very nearly what may be termed a received text, but there is really no one received text of the Rheims New Testament among English-speaking Roman Catholics.

"The value of the Douay . . . consists . . . mainly in its vocabulary, which has forced, as it were, into the language

many Latin words serviceable for the expression of scriptural ideas. Many of these usages the King James revisers subsequently adopted."

Two notable articles on the Douay Version are to be found in the Catholic Encyclopedia from the pen of Monsignor Ward, President of St. Edmond's College, England. This writer points out that the Bibles popularly styled "Douay" now "are most improperly so called, being founded on the revisions of Bishop Challoner in 1749-52."

"Scarcely any verse remains as it was originally published." In nearly every case, Monsignor Ward adds, "these changes took the form of approximating to the Authorized Version." To this may be added Monsignor Ward's further statement in the article on Gregory Martin, that the Douay "is full of Latinisms, so it has little of the rhythmic harmony of the Anglican Authorized Version, which has become part of the literature of the nation," but in accuracy and scholarship he thinks it "superior to any of the English versions which had preceded it, and it is understood to have had great influence on the translators of the King James Version." So it appears that these two companies of translators, working from such widely different standpoints, in the end proved each to be useful in varying degrees to the other.

Thus, it came to pass, that first by Wyclif, then by Tindale, in the stormy days of Henry VIII and on through "the spacious times of Great Elizabeth—the golden age of English letters—then finally under King James, the English Bible came to its throne of power."

Although the Rheims Version is ignored in the directions to the translators of the King James Version, as the Geneva Version had been ignored in the directions to the translators of the Bishop's Bible, yet in each case the translators were influenced by the version which had not been mentioned.

Fulke's volume containing the Rheims and the Bishop's Bible, versions of the New Testament, probably had considerable influence in determining many of the changes due to the Rheims Version, which were made by the revisers of the

King James Bible. The Rheims translators were conscientious in their efforts to translate correctly, and many Latin derivatives appear in their version, because representing more accurately than any other words the meaning of the Vulgate text. These Latin derivatives were in many instances adopted by the King James translators, and replaced words used in earlier versions. An example of this is in the familiar I Corinthians XIII, where earlier English versions, except Wyclif's, used the word "love," and Rheims the word "charity," which the King James translators adopted, but which has been replaced by "love" in the modern Revised Versions.

When James I ascended the throne in 1603, there was religious dissension, not only between his Protestant and Catholic subjects, but also between different groups of Protestants. The Geneva Bible, with its notes, had not been acceptable to the bishops, while the Bishop's Bible was never the version commonly read in the home. The Catholic New Testament had attacked all Protestant versions as inaccurate. Fulke had published his New Testament with the Rheims and Bishop's Bible versions parallel. It was evident that a new translation of the Bible into English must be made for the purpose of reconciling differences caused by lack of uniformity in the current versions.

As a result of a conference at Hampton Court, between the King and representatives of the Bishops and the Puritan party, a new version of the Bible was decided upon, and the Dean of Westminster and the Regius Professors of Hebrew at Oxford and Cambridge were asked for the names of competent scholars to do the work. Bishop Burnett, in his History of the Reformation in the Church of England, gives an account of the making of the King James Version. Various lists of names of the translators differ, about fifty such names being given, only forty-seven on any one list.

This version was not, like preceding versions, largely the work of an individual, either with or without assistance, but was truly representative of the best opinions of the time.

Bancroft, Bishop of London, had stated in the conference at Hampton Court, that "if every man's humor should be followed, there would be no ende of translating." In the preface, of 1611, "The Translators to the Reader," is a discussion of the general problems by which the translators were confronted. They refer to previous versions in Greek and Latin, and to the work of their immediate predecessors in English, and say:

"Truly (good Christian Reader) wee never thought from the beginning that we should neede to make a new Translation, nor yet to make of a bad one a good one (for then the imputation of Sixtus had bene true in some sort, that our people had bene fed with Gall of Dragons instead of wine, with whey instead of milke;) but to make a good one better, or out of many good ones, one principall good one, not justly to be excepted against, that hath bene our indeavour, that our marke. To that purpose there were many chosen, that were greater in other men's eyes than in their owne, and that sought the truth rather than their own praise."

The successive versions of the English Bible were based in almost every instance on the best available translations and original sources. We find that the King James translators used two new Latin versions, one the Old Testament, by Arias Montanus, given in the Antwerp Polyglott of 1569-72, the other the Old and New Testament, by Tremellius, 1580 and 84, with Apocrypha by Franciscus Junius. John Selden gives in his Table Talk an account of the deliberations of the board of review, and says, "They met together, and one read the translation, the rest holding in their hands some Bible, either of the learned tongues, or of French, Spanish, Italian, etc."

In copies of the title-page of the King James Bible, as printed in England, appear the words "Appointed to be read in Churches," and the version is commonly known as the "Authorized Version," perhaps from that fact. We have no record of any special action of Church or Parliament or King which would justify that title. In 1881, Lord Chancellor Sel-

borne wrote to the London Times, June 3, expressing the opinion that the words on the title-page would probably not have been used without official sanction, and suggesting that they were authorized by an Order in Council, the record of which is no longer extant, because "all the Council books and registers from the year 1600-1613, inclusive, were destroyed by a fire at Whitehall, on the 12th of January, 1618 (O. S.)."

This is possible, but as Mr. Pollard says, "As far as I know, it has never been contended that there was any Order in Council passed in 1584 or 1585 to justify 'the placing of the words "Authorized and Appointed to be read in Churches" on the title-page of the Bishop's Bible,' where they appeared for the first time in 1585, so probably the words 'Appointed to be read in Churches' on the version of 1611 'literally expressed the facts that this Bible was printed by the King's printer with the approval of the King and the Bishops for use in Churches, and that no competing edition of the largest volume' allowed to be published." (Records of the English Bible, A. W. Pollard, p. 60.)

The average reader thinks that we have in our modern copies of the King James Bible the identical version that was issued in 1611. As a matter of fact, there was one notable difference between two issues of that version bearing the date 1611, though one was perhaps printed later, which caused them to be known, respectively, as the Great He Bible and the Great She Bible, because in Ruth III, 15, one reads "he went," the other "she went." Between these two issues of the same date are several thousand differences in text. It is usually believed that the Great He Bible is really the first issue of the King James Version, although some critics, among them Mr. Scrivener, accord that honor to the Great She Bible. Many changes have been made silently in the text in subsequent issues. They have usually been improvements. There is no standard edition of the "Authorized Version." The variations found in six different editions by the Committee on Versions of the American Bible Society (1851) were about twenty-

four thousand in number. Illustrations of these are "Thou art the Christ," Matt. XVI-16, and "The Servant is not greater than his lord," John XV-20. These readings appeared first in 1762, in an edition by Dr. Thomas Paris, of Cambridge. The King James Version of 1611 reads, "Thou art Christ" and "The Servant is not greater than the Lord."

In 1701 the marginal dates were placed in an edition of the King James Version by Bishop Lloyd. These dates are from Annales Veteris et Novi Testamenti, 1650-54, by Archbishop Ussher, and are in many instances incorrect, as fuller knowledge of ancient history has shown. The King James Version did not for many years attain the position which for nearly three centuries it has held, for there were many, even among the clergy of the Church of England, who preferred the Geneva Version, which continued to be printed.

From 1611 to 1881 no general authoritative revision of the English Bible was made, although many changes had found their way into the text through the editions of 1629, printed at Cambridge by Thomas and John Buck; 1638, printed at Cambridge by Thomas Buck and Roger Daniel; 1701, printed at London, edited by Bishop Lloyd; 1762, printed at Cambridge, edited by Thomas Paris; 1769, printed at Oxford, edited by Dr. Benjamin Blayney.

These editions all differed. The King's Printers issued an edition in 1631, for which they were heavily fined, because they omitted the word "not" from the Seventh Commandment. In 1716 an edition, printed by Baskett, contained many errors, among them Vinegar for Vineyard, in the headline of Luke XX. In the Parallel Bible, Oxford 1885, all variations from the 1611 text are noted in the margin.

In 1833 the Oxford Press published a line for line reprint of the "Great He Bible" of 1611. In 1851-2 the American Bible Society published an edition to which all subsequent editions of the Society conform. It was intended to be an accurate reprint of 1611. In 1911 the Oxford Press issued a "reprint in Roman type, page for page," of the "Authorized

Version published in the year 1611." This contains an introduction by A. W. Pollard.

Lapse of years made the language of the King James Versions antiquated, and, in the case of some words, unintelligible to the reader. Exploration and discovery increased greatly the means of knowing what the original text of the Bible probably was. Increased knowledge of history and archæology made the interpretation of the ancient writings clearer, while increased knowledge of the ancient languages themselves made more accurate translation possible. These considerations led to official action by the Convocation of Canterbury on a suggestion, made as early as 1856 by Professor W. Selwyn, and repeated by Bishops Wilberforce, Ellicott and Ollivant in 1870, that a revision of the English Bible be made. A committee was appointed, consisting of eight members from each house of Convocation, with authority "to invite the co-operation of any eminent for scholarship, to whatever nation or religious body they may belong." American scholars from nine Protestant denominations formed a committee in 1871 to work with the English committee.

In 1881 appeared the Revised New Testament, in 1885 the Revised Version of the Bible, and in 1895 the Revised Version of the Apocrypha. By agreement the changes suggested by the American revisers, but not accepted by the English committee, were printed as an appendix which was to appear in every copy of the revised Bible for fourteen years, during which the American committee agreed not to sanction any edition not printed by the university presses of England. In 1885 the English committee disbanded, but the American continued in existence, and in 1901 published "The Holy Bible," containing the Old and New Testaments, translated out of the original tongues, being the version set forth A. D. 1611, compared with the most ancient authorities and revised A. D. 1881-1885, newly edited by the American Revision Committee, A. D. 1901, standard edition.

It is obviously impossible in the time allotted to a single lecture even to mention by name, much less discuss any con-

siderable number of the many translations of the Bible or parts of it into English, which have been made by individuals or by groups of scholars, either independently or under the auspices of some organization. There are several versions of recent date which give modern, in some instances almost colloquial, English renderings from the original languages. At least, one such version is in so-called "American" English.

A New Translation of the New Testament, by Dr. James Moffatt, of Mansfield College, Oxford, 1913, may be mentioned as an example of scholarly work by an individual. "The Holy Bible, an Improved Edition," published by the American Baptist Publication Society, 1912, is an example of a recent version, issued under the auspices of the Baptist Church. A particular merit of this version is the printing of the poetical passages in the Prophets so as to indicate that they are poetry—not prose. The Revised Version and the American Revised Version omitted to do this in the Prophets, though they indicated poetic passages elsewhere by printing as such. The Swedenborgian Denomination has in preparation a new translation of the Bible into English.

A volume in which the indication of literary forms is made throughout, not only in recognizing by the printing the characteristic parallelisms of poetry as distinguished from prose, but also showing dramatic and other literary forms as well, is "The Modern Reader's Bible," arranged by Dr. R. G. Moulton. Similar arrangements will be found in The Bible for Home and School, edited by various scholars.

Although both the Old Testament and the New are of Jewish origin, the translations into English that have circulated in so many and such large editions for four centuries have been almost exclusively the work of gentile scholars. A fact of great importance, not generally referred to or even known among gentiles is that there are versions of the Old Testament in English used commonly by Jews, made by Jewish scholars. The most recent of these Jewish versions is "The Holy Scriptures according to the Masoretic Text, A New Translation, with the aid of Previous Versions and with con-

stant consulation of Jewish Authorities." The Jewish Publication Society, Philadelphia, 1917. It presents in English the Jewish Scriptures, as arranged in the three ancient collections, and not as arranged in the later Greek or Latin translations of them, which the usual English versions have followed.

The following excerpts from the preface to this edition set forth the most important facts concerning Jewish-English versions:

"The need of such a translation was felt long ago. Mention may here be made of the work of Isaac Leeser in America, which was both preceded and followed by two translations produced in England; the one by Dr. A. Benisch, the other by Dr. Michael Friedlander, The most popular, however, among these translations was that of Leeser, which was not only the accepted version in all the synagogues of the United States, but was also reproduced in England."

"The present translation is the first for which a group of men representative of Jewish learning among English-speaking Jews assume joint responsibility, all previous efforts in the English language having been the work of individual translators. It has a character of its own. It aims to combine the spirit of Jewish tradition with the results of biblical scholarship, ancient, mediaeval and modern. It gives to the Jewish world a translation of the Scriptures done by men imbued with the Jewish consciousness, while the non-Jewish world, it is hoped, will welcome a translation that presents many passages from the Jewish traditional point of view.

"We are, it is hardly needful to say, deeply grateful for the works of our non-Jewish predecessors, such as the Authorized Version with its admirable diction, which can never be surpassed, as well as for the Revised Version with its ample learning, but they are not ours. The editors have not only used these famous English versions, but they have gone back to the earlier translations of Wycliffe, Tyndale, Coverdale, the Bishop's Bible, and the Douai version, which is the authorized English translation of the Vulgate used by the Roman Catholics; in a word upon doubtful points in style, all English versions have been drawn upon. The renditions of parts of the Hebrew Scriptures by Lowth and others in the eighteenth century and by Cheyne and Driver in our own days were likewise consulted.

That additions to our knowledge and changes in our language will be made in the future as they have been in the past is probable, so that future revisions of the English version

may be as necessary or desirable as was the Anglo-American revision of 1881-1901, but a comparison of all the versions from the Wycliffite to the American reveals the interesting fact that in spite of the thousands of changes in vocabulary, phraseology, translation and original text, the English Bible of 1384 and of today is the same in every important respect.

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THE IRRITABLE MOVEMENTS OF PLANTS

By John M. Macfarlane

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To some of you the title of my lecture, "The Irritable Movements of Plants," may sound strange. But I hope to prove to you before the close of this lecture that the title is appropriate. For all plants and even plant parts show irritable movements, and when such cease death soon follows. When we trace the continuous life-history of any plant five functions or physiological activities are observed. The first and most fundamental is *irritability,* which brings each organism into relation to environal stimuli, whether such be heat, light, chemical agents, gravity or electricity. The second is *nutrition* or the capacity to absorb food products and to utilize these. The third is *respiration,* or that action of living tissue which ensures repair and oxygenation of wasted areas. The fourth or *growth* is a combined result, up to a certain maximum for each plant, of the activities effected by the preceding agents. The fifth is *reproduction* or multiplication that is the climax function, and that ensures dissemination and perpetuation of each species.

The first of these, or irritability, is our present theme. It may be shortly defined as "the capacity that each organism possesses for perceiving and responding to environal stimuli." Such stimuli or irritant agents may be any form of energy, as for example heat—and its negative exhibition cold—light, mechanical stimuli, gravitation, or electric or chemical stimuli. And according to the strength or intensity of each of these the result of their application may be beneficial or more or less injurious to each organism.

But in thinking of the action of any stimulant or irritant agent, and in attempting to describe the succession of events involved in each act of stimulation, it may surprise you to learn that accurate note should be made of eleven successive

phase relations. First the environment—whether beneficial or retarding—should be taken account of. For if, as in the case of our students when observing the sensitive plant, a temperature of 86-92° F. be recorded round the organism, as well as a free interchange of air be arranged for, best results will be secured. On the other hand, a temperature of 35-40° would largely paralyze each one, while lack of sufficient fresh air and so of oxygen would prove equally injurious. Second: the character of the stimulus or stimuli applied must be recorded, for some part of a plant may be irritable to one form of energy and feebly so to another. Third: the point of application of each stimulus is of prime importance. For while gravity as a pulling energy, acts powerfully on each young root-tip, so as to cause it to grow into the earth, no response would be shown by a root area half an inch or even less removed from the tip. Fourth: the strength of stimulus may determine whether a feeble or a strong effect will be produced in the plant issue and a corresponding response be shown by it. Fifth: after any irritant stimulus has been applied to a definite part, there ensues a time during which the living protoplasm is being changed in its molecular structure and then is "becoming aware" of such stimulant, and this we term the latent period. It is one of the striking discoveries also of recent years that even this period is divisible, as will be explained more fully later, into a "presentation period" during which the protoplasm is being gradually acted on or irritated by the applied energy, and a "perception period" when such change is effected in it as to cause motion. Sixth: when a longer or shorter latent period has elapsed response or motion succeeds. This may be either slight as is often true, or it may be pronounced as when a sensitive plant leaf contracts through two or more inches. Seventh: we must tabulate what in most cases next happens, namely, the rate and extent of propagation of the stimulation action, which in some cases may be confined to a small area, or may extend over several inches of plant tissue. Eighth: frequently in plants—more rarely in animal parts—we must apply, and record the results of, a summation

of stimuli; for it may be that two, three or more stimuli must be given before full contraction or movement ensues. Ninth: the period when, and the extent to which complete change or contraction motion has taken place is noted. Tenth: thereafter succeeds, what I have termed the "neutral period" or the interval during which the part remains under the last phase, though probably preparing for the next and final phase in the complete act. This is the eleventh or re-expansion or recovery period, during which the plant gradually recovers its original state.

The above may seem a most complicated course of events for ordinary plants to pass through when varied currents of energy reach them, but such is exactly true, and it may come home more nearly to ourselves when it is added that practically every action on our part is also the outcome of such a train of relations.

Let us consider, for a few minutes now, a tiny water plant which you have probably all looked on myriad millions of, even if you have failed to identify it. A green film or scum forms at times during summer over stagnant manurial pools. If a small drop be placed under the microscope thousands of little unicellular oval green bodies move actively over the field of view, each propelled by two delicate cilia. Each tiny plant is called by the botanist Chlamydomonas. If a mass of the scum be shaken up with water in a jar, and the jar be then placed in a window these millions of little plants will rapidly migrate to the lighted side as being that of optimum or satisfying illumination and stimulation. The benefit thereby derived is, that thus suitable light rays are absorbed by the green substance or chlorophyll, so as to enable each little organism to build up food. In other words, the irritable response shown by each brings it into best position for nutritive activity. But if intense sunlight fall on the same side of the jar soon all will migrate into the depths of the liquid or even to the shaded side, for now the intense blue-violet rays of light are over-irritant or stimulating, and disintegrating in action.

But again if each be studied in relation to gravity-pull it

is found to move away from the earth, or is in botanical language—apogeotropic. Equally characteristic reactions to oxygen supply may be proved. But in this connection some idea of the extreme delicacy of stimulation action and of organismal reaction may be gathered, when we learn that some of the still smaller plant organisms or bacteria perceive and move toward a source of oxygen that is the one hundred millionth of a milligram in amount.

With such observational facts before us the botanist is slowly but surely reaching the conclusion that probably Newton's great law which declares that "Action and reaction are equal and opposite" applies surprisingly well for plants as for large inorganic masses, though it would yet be rash to affirm that the *equal* and *opposite* relation is always exactly true or demonstrable.

We may linger next over that attractive and striking type that you have doubtless all watched, the tropical Sensitive plant or Mimosa pudica. Abundant as a native weed in Brazil and the Guianas, it has now spread over the entire tropics. Each leaf shows a sensitive swelling or "pulvinus" at the base of the leaf-stalk, and 60-100 leaflets making up the green blade. At the base of each of these is a little pale circular area that is the sensitive and motile centre of it. It may be asked: what is the optimum environment for experiment with such a plant? To this we would reply that 88-92° F. is average; and such is the frequent temperature in Brazil during the growing season. So when our students experiment with it, for two or three hours in the stove houses of the University during March, they soon mop their faces and almost think themselves to be in Cuba. Much of the defective record regarding it from European observers has been due to want of precaution in securing such surroundings.

If now, with forceps, one apply a delicate mechanical stimulus or pinch to one of the tip leaflets, after a latent period of about one-quarter second, it and its neighbor opposite rapidly rise upward or contract face to face. Speedily thereafter pair will succeed pair in rapid succession until 20-22 have risen

together over an area of about two inches, and within 16 to 20 seconds. The energizing stimulus then splits in action so as to close successively from below upward all of the remaining leaflets on the three primary leaflets left, and also moving downward toward the leaf-base soon causes the entire leaf to drop through one to two inches.

But careful watching, even with the naked eye, reveals a highly suggestive sight. For just before each pair of leaflets contracts, a sudden flush change is noticed to pass across the face of each circular pale area already mentioned, so that from being almost white it becomes of a dull watery green hue. When we attempt, by aid of the microscope, to learn the meaning of this we discover that each of the thousands of tiny cells which make up the pale spot contains a layer of living protoplasm that encloses a clear shining and highly complex substance—the aggregation body. When an irritant stimulus reaches and affects each cell, the protoplasm starts a change in the clear mass so that it condenses and in the act expels water, which migrating from the tense upper surface to the less tense lower causes the latter to become more turgid and tense and so to force upward the leaflet. It seems not unlikely that in its fundamental bio-energic and bio-chemic relations such molecular change and movement may yet shed some light on nerve-muscle changes in animals.

Should we desire to apply some other type of energy it is easy and convenient to bring a heated wire within one-sixteenth inch of the surface of any, and specially a young active leaf. Closure of leaflets rapidly and continuously will occur, and the entire leaf will drop within 30-50 seconds. But it is of interest to note that under optimal environal conditions, propagation of stimulation change may be carried from the stimulated leaf into the stem of the sensitive plant, and spreading upward as well as downward may cause the third leaf below, also the third or fourth leaf above to drop in definite and successional relation. Now such action may have spread continuously over 8 to 9 inches of the plant from the minute centre of original irritation or stimulation. So if the stimulus

thus applied, as mechanical energy from the hand of the experimenter, cause so widespread and marked a reaction on the part of the plant, it strongly suggests that the kind or quality of energy that traverses the leaf substance is of very perfect type.

We have already spoken of "benefit" as the keynote to the movements in Chlamydomonas, and such equally applies to the Sensitive Plant. For alike observation and experiment have shown that by such rapid closures as above described, it is the better able to resist torrential rains and winds such as often come in its native home in early afternoon, and which cause lady visitors to arrange their calls "before rain" or "after rain." But even more, it seems, distinct protective benefit is secured toward evening in the tropics, when a sudden drop in temperature often occurs. By folding together of the leaflets and dropping of the leaf at that time, a too sudden and injurious heat radiation is prevented.

But if it be now objected that such rapid irritable movements are shown by relatively few plants, it can be replied that while such is true it is also true that all stems and leaves are constantly being affected by environal stimuli and move in response. For as every one is aware, if the good housewife grows a begonia, a coleus or similar plant in the home window, the stem will bend toward the light, since it is in botanical phraseology heliotactic and heliotropic, or light-perceptive and light-turning. The leaves also will so move as to place themselves face on to the light, and will thus secure optimum sun rays that effect food elaboration. Equally true is this for all of the leaves on a tree, so that we begin to appreciate how widespread—one might truly say how fundamental and universal—are the phenomena of irritability.

We turn now to another and highly attractive field of investigation, that a flood of light has been cast on during the evolutionary period. I refer to the actions and reactions exhibited by roots. Too often we view these as passive and insensitive things. For when the farmer spreads his grain broadcast, or plants each corn or bean seed, he seldom stays

to reason or inquire as to why each of these on germinating shows invariable downward turning of the roots. But experimental cross-questioning gives at least partial answer. For if we carefully remove such a seedling from the soil, neatly cut off one-eighth inch of the root-tip, and place it crosswise in a moist glass vessel, it shows no indication of a perception that it is out of line with gravity as a pulling energy. But if alongside it another but uninjured seedling root be set out in like position, within an hour the uninjured *tip portion* will in lengthening start to bend round and downward. And so in less than a day the soft growing tip is once more in line with gravity and is lengthening downward, even though the older part remains transverse.

What then causes the different results with the decapitated and the uninjured root? It is that in the former the sensitive and perceptive tip has been removed and only after it has been regenerated would irritable responses to gravity-pull take place. But when critical study of each root-tip is made, an even more suggestive sequence of events occurs. For then each transversely placed root exhibits at the extreme tip, not only a latent interval of stimulation-action, but an earlier period even of this that we call the *presentation time*. Such may last in some roots for six to twenty minutes. Then a *perception time* of about the same duration succeeds, and only at the end of this double presentation and perception interval that constitutes the entire latent period, changes start in the root cells. These changes consist in a propagation of stimulatory movements along cells somewhat behind those of the tip, so that the *propagation time* next succeeds. Finally cells just behind the last, and a slight distance from the perceptive tip, start to lengthen more on the upper than on the lower side during what we call the *response period,* and bending of the tip results.

But not only are nearly all roots thus geotropic, they are hydrotropic or capable of being irritated by, of responding to, and of growing toward, sources of moisture. And some of my audience who are householders may have learned the truth

of this in expensive manner. For as one walks along our streets in autumn, it is a common sight to find workmen busy on some drainpipe from a home, that has become crowded with a dense mass of tree rootage. When such rootage is hauled forth, it often, in length and aspect, greatly resembles a boa-constrictor. The history has been that the Carolina poplar or Cottonwood tree of our avenues develops roots that are strongly hydrotropic. If then some small hole has been made in a pipe during other operations, the escaping moisture is perceived by some root-tip of the tree, which grows toward and enters the pipe, there to branch and vegetate luxuriantly, under the stimulant influence of the abundant water supply.

Did time permit, attention might be given to still another irritable response that nearly all roots show. I refer to the negatively stimulant action of light. Thus if one grow spring-bulbs in hyacinth glasses that remain exposed to stronger light on one side than another, the lengthening roots will decidedly bend from the light. So to sum up we can say that roots respond positively to gravitation and water stimulation, but negatively to light rays. And here again in such resultant response we note that *benefit* is thereby secured for the roots, since the combined effect is to bring them into ever renewed contact with soil particles, from which nutritive salts might be obtained, to ensure the solution of such salts by supplies of moisture, and to prevent the action of drying winds and sun-rays on their surfaces.

A very different relation to any of the above is exhibited by two plants that we may next deal with. The Venus-Fly-Trap or Dionæa muscipula is of perennial interest to a Philadelphia audience, as having been first gathered in its native haunts round Wilmington, N. C., and sent to European botanists more than 150 years ago by John Bartram. I always dub it "the most wonderful plant in the world," and future decades will increase rather than diminish this reputation.

The plant consists of a rosette of leaves from whose centre arises the flowering stalk in May-June, that need not now concern us. Each leaf has a broadened stalk, and a blade that

surprisingly resembles the old-fashioned rat-trap with its halves that can clap together. Round the margins are tapered bristles that can savagely interlock when the halves close. On either half also are three fine sensitive hairs, each showing a base, a joint, and a tapered shaft. When grown in sunny Savannah situations over a few miles of country north and south of Wilmington, N. C., it has a rich crimson color, that is alike attractive to insects, and is the expression of beautiful ruby glands which secrete an acid digestive juice after continued stimulation.

If an insect, or an experimenter with pencil in hand, irritate a single hair once in neat manner, no evident change ensues. But if within one to sixty seconds thereafter another shock be applied, rapid and so-to-say snapping closure occurs. For here we have a remarkable case of summation of stimuli as necesary for complete contraction, and which always holds true whether we repose on the sunlit Savannah lands of the South and leisurely irritate hundreds of leaves, or bring them North into the greenhouse and study under varying conditions. If a fair sized insect has been closed on, its short-lived struggles act as added stimuli that cause tense tightening of the leaf-halves, till the outlined body of the insect may be traced without. Then the crimson glands exude around it an acid, liquid ferment that effects digestion of the animal tissues. In this case distinct benefit is secured to the plant, for in this manner important supplies of rich nitrogenous food in dissolved state can be absorbed directly by the leaves.

Until little more than a quarter century ago it was believed and taught that only the six sensitive hairs could receive a stimulus and propagate stimulation changes through the midrib so as to cause contraction. But if one snip with forceps any area of the leaf-halves twice, or apply for one or two seconds a hot wire near the surfaces, or drop a trace of mineral acid, or apply the terminals of an electric battery, the same result is secured. Not only so, as one of our own students discovered when experimenting on them, two slight taps or scratches over the outer surfaces will also suffice. Thus the entire blade is

a highly irritable organ, that is capable of receiving and responding to varied stimuli.

As our last example of plant irritability, and as being one that is related to Dionæa in fundamental phenomena, we may choose the familiar Sundew of our swamps, that with equal appropriateness is technically named Drosera (the Dew plant). This has been rendered classic, for all time, from the extensive studies made on it by Charles Darwin, as well as the earlier ones of Mrs. Treat at Vineland, N. J. Again, the small leaves form a basal rosette round the annual flowering shoot. Each shows spreading delicate club-shaped hairs radiating from the upper leaf surface, and these, after a dewy summer night, glisten with seeming dewdrops that are highly viscous in consistence. Little insects alighting become entangled, and if we suppose that one of them has alit on and touched a single hair, the irritation thus started is succeeded by a latent period of about two minutes. Then a noteworthy modification can be observed to start in the tip of the hair and to travel downward to its base. This consists, much as in the contractile tissue of the Sensitive-plant, in a contraction and balling together of a clear compound inside each protoplasmic sac. That the protoplasm also is powerfully irritated is shown by its becoming increasingly rapid in circulatory motion, and in its forming tiny protoplasmic waves against the enclosed liquid. As one watches the transformations spreading downward, from cell to cell, these reach the base of the hair, and here the tension on its lower side becomes so increased that incurving of the hair, and so of the captured insect, is effected. Thereafter like cell transformations are continued upward into neighboring hairs, and so alter their turgidity that bending in rhythmic sympathy with the first one proceeds.

We have said nothing hitherto as to neutral period, or the succeeding re-expansion that may occur in the above types. In the Sensitive-plant, after drop of the leaf, thirty or fifty seconds may elapse before commencing re-expansion starts. Then through a period of seven to sixteen minutes recovery

takes place, the time varying with the age of the leaf and the environal conditions surrounding it. In the Venus Fly-Trap and Sundew, since important and beneficial digestive actions occur if some particle of food has been entrapped after first stimulation, ten or fifteen days may elapse before the halves re-expand or the hairs unfold. So here are presented those variation details that run as profound factors throughout the entire range of plant organisms.

In such a lecture as the present, one can only briefly refer to a few outstanding facts of plant irritability. But in the onward march of scientific investigation it is encouraging to realize that nearly all of the knowledge thus shortly outlined has been garnered during the past half century—the *evolutionary period,* as I delight to call it. And as your lecturer of today has lived and felt and thought through that half century from boyhood upward, a great principle has seemed to grow ever more clear, and has during the past eight years become his expressed conviction in classroom and in student discussions. It is that *energy,* not matter, represents the great fundamental and important phenomenon of cosmic evolution; may we not even say the evolution of our solar system, so far as we now know it? For whether we view it as heat, light, chemic energy, electricity, gravitation or mechanic action that themselves are interchangeable, energy it is that flows through, molds and places in orderly system material or ether particles that are in themselves inert and passive. So the teachings of Leibnitz deserve respectful consideration, even though latter-day discovery has carried us beyond his purview in many things. To understand, then, the marvelous interactions, transformations and condensations of such energy is our great present-day biological quest.

ATOMS, OLD AND NEW

By Horace C. Richards
Professor of Mathematical Physics

The subject which I have chosen may seem in more senses than one a very small matter to which to invite your attention this afternoon. In these strenuous days, when the physical sciences are called upon to undertake tasks of such great magnitude, it may be thought almost out of place to discuss a subject apparently so remote from practical application as the ultimate structure of matter. But we must recognize that science pursued for merely utilitarian ends is sterile, and that the greatest progress is made where ingenious application is supported by sound theory. The atomic theory is at the basis of much of modern chemistry and of modern physics, and is therefore of prime importance to the progress of these sciences. And even direct applications are not lacking. Thus the same investigations which have taught us the properties of the electrons, those minute constituents of atoms, have also enabled us to talk by wireless across continents and oceans, and the study of radium has given us not only a new element but a new curative agent, and has thrown light not only upon the disintegration of an atom, but upon the gun-sights and the wrist-watches of our soldiers in the trenches.

The atomic theory of matter is by no means of modern origin. In fact, the question of the divisibility of matter is one which must necessarily arise in the early stages of scientific thought. So we find among the Greek philosophers the school of the atomists, headed by Leukippos and Demokritos, who attempted to explain the manifold phenomena of nature as due to the motions and combinations of ultimate indivisible and indestructible particles, to name which they invented the word atom. Their views are incorporated into the system of philosophy of Epikuros and transmitted to the Romans by the poet Lucretius, to whose poem, *De Rerum Natura,* we owe the best known account of the theory. We read:

"The atoms are of solid singleness, and, compact of smallest parts are closely coherent—not compounded from a combination of these parts, but strong in their everlasting singleness; from these Nature allows nothing to be broken off or diminished; . . . very different are they in their forms, varied by manifold shapes."

But Greek philosophy, while remarkable for its keenness of insight, was not adequately founded on experiment, and the atomic theory was unable to hold its own against opposing views. The influence of the School of Aristotle was thrown against it and it was unable to make headway until comparatively recent times, when gradually it won for itself renewed recognition. Thus, in the seventeenth century we find Boyle, Newton and others holding to the theory of the atomic structure of matter.

Here, for instance, is Newton's description:

"It seems probable to me that God in the Beginning form'd Matter in solid, massy, hard, impenetrable, moveable Particles, of such Sizes and Figures and with such other Properties and in such Proportion to Space as most conduced to the End for which he form'd them; and that these primitive Particles being Solids, are incomparably harder than any porous Bodies compounded of them, even so very hard, as never to wear or break in pieces. . . . The Changes of corporeal Things are to be placed only in the various Separations and new Associations and Motions of these permanent Particles."

Such views it is seen show little progress over those held by the Greek philosophers twenty centuries earlier, and another century was to go by before they were to be transformed and modernized by the genius of the English scientist, John Dalton.

The epoch-making hypothesis of Dalton, which laid the foundation of the modern atomic theory, was to combine the conception of the atom with the doctrine of the elements, and to introduce mass as the essential criterion by which atoms of various kinds might be distinguished. In place of

the indefinite complexity of the older views we are presented with a comparatively small number of kinds of atoms, those of the elements (some 80 of which are at present recognized). The atoms of each element are exactly alike in all respects, those of different elements differ in mass. Thus atoms of sulphur are twice as large as atoms of oxygen, silver atoms are nearly twice as heavy as those of iron. The smallest atom known is that of the gas hydrogen, which is accordingly taken as the unit of comparison.

While the atoms are the fundamental units, they cannot in most cases exist in isolation, but are drawn together by the forces of chemical affinity into groups, which Dalton called compound atoms and we now name *molecules*. The atom bears to the molecule the relation of the letter to the word on a printed page. While the number of kinds of atom is limited, that of the varieties of molecule is practically unlimited, there being as many kinds of molecule as there are substances, or words in the chemical dictionary. The number of atoms in a molecule varies greatly. In a few exceptional cases the atom and the molecule are identical. This is the case, for example, with mercury and with the rarer gases of the atmosphere. These elements are the A, I, and O of chemistry. The inorganic molecules with which we begin our chemical studies are appropriately words of one syllable, containing but a few letters; while some of the organic molecules, with their hundreds or even thousands of atoms, far surpass the largest words in our dictionaries.

The elementary atom of Dalton, patterned after the earlier atom, consisted of a hard, solid, impenetrable nucleus, which, as he says, "may be globular or of the five regular bodies." However, "every atom has an atmosphere of heat around it, in the same manner as the earth or any other planet has its atmosphere of air surrounding it, which cannot certainly be said to be held by chemical affinity, but by a species of attraction of a very different kind." This atmosphere of heat or caloric, which in Dalton's time was held to be an imponderable fluid, was supposed to be of much greater volume than

the atom itself, at any rate when the substance is in the gaseous state. To the repulsion of these atmospheres is due the pressure of the gas, the particles being held in equilibrium in positions analogous to that of a square pile of shot.

Such was the atom of Dalton. It was one of the tasks of the chemistry of the nineteenth century to study the combinations of these atoms and to make more precise the relation between the elementary and compound atoms, or as we now say between the atom and the molecule. Meantime, the development of the sister science of physics threatened to rob the atoms of their atmospheres.

Side by side with the growth of the science of matter was growing up the science of energy. Davy, Rumford and others were pointing the way to new views as to the nature of heat, and by the middle of the century the scientific world was ready for the doctrine of energy. The blending of this doctrine with the atomic hypothesis gave us the kinetic theory of matter, as developed by Clausius, Maxwell, Boltzmann and their successors. This teaches that the atoms (or better, the molecules) are not at rest but are in ceaseless motion, which is the more violent as the temperature is greater. The character of the motion varies with the form of the substance. Thus in solids the motion is more or less vibrating in character, each oscillating about a fixed position; in liquids the molecules, keeping close to one another, move from point to point; while in gases they are separated by spaces large compared to their size, and move in straight lines except when they happen to collide. One may liken the arrangement in a solid to the audience in a lecture hall, more or less excusably restless according to the dullness of the lecturer, but politely retaining their places; that of a liquid to a crowded reception where all are moving about from place to place, and that in a gas to a few children flitting about in a large field.

By the development of these views it has proved possible to interpret practically all the physical properties of gases as well as many of those of solids and liquids. For instance, the pressure of a gas upon its envelope is due not to the

mutual repulsions of the molecules or of their atmospheres, but to their constant bombardment of the walls of the enclosure as they ceaselessly fly back and forth.

Such a picture of incessant motion in matter which to our senses seems perfectly quiescent, is somewhat startling, especially when we learn the magnitude of the motion. Thus we are told that the molecules of air are moving with an average velocity of 500 meters a second or almost the speed of a rifle bullet. One is tempted to wonder whether after all we are on the right track, and whether the molecular hypothesis, well adapted as it is to co-ordinate some classes of phenomena, will eventually prove inadequate. Happily we have quite recently received direct evidence in favor of the theory.

The molecules of the air are too minute and are moving too swiftly to be visible. It was shown, however, by Maxwell that in a mixture of particles of different sizes the average energy of each kind would be the same, so that the larger particles would move more slowly to compensate for their greater mass. (This is the law of the equipartition of energy, concerning which there has been much discussion of late.) If then we have suspended in the air or other medium specks of dust of visible size, these particles should be similarly in constant motion of exactly the same kind as the molecules, but, of course, enormously slower—so slow in fact as to be imperceptible. We are thus confronted with the dilemma: the molecules are too small, the larger particles too slow, for us to detect their motion. Our only hope for escape lies in the intermediate region of particles imperceptible to the naked eye but accessible to microscopic vision.

Now, long before, in 1827, the English botanist, Robert Brown, on examining with a microscope suspensions of small particles in a liquid, had observed peculiar incessant quivering motion of the smallest particles, which he was unable to explain. This motion, which is known as the Brownian movement, has been carefully studied of recent years and is now recognized to be identical in character with the agitation of the molecules of the fluid. In fact, the particles are now

found to obey the same laws of distribution as had previously been calculated for the molecules. For example, we know that the density of the atmosphere decreases as we ascend according to a law which can be calculated from the properties of gases. Now we find that these Brownian particles arrange themselves according to exactly the same law, except that the distances are measured in thousandths of a millimeter instead of kilometers.

We are thus able with the microscope to study the molecular motions, and molecules and atoms have passed from being hypothetical fictions to physical realities. In fact, we can even weigh them and measure them. Thus if we measure the height of an atmosphere of Brownian particles whose size can be determined and compare it with that of any gas, a simple calculation enables us to find the size of the gas molecule.

Another method by which the size of molecules may be estimated is found in the experiments with thin films. It is familiar to us all that a drop of oil will spread over the surface of water. A given quantity of oil, however, will cover only a limited area—an area which can be definitely measured. The explanation of this on the molecular theory is simple. When the film is reduced to the thickness of one molecule a further extension would only rupture it. Knowing the quantity of oil used and the area of the film it is an easy matter to calculate the thickness and hence the diameter of the oil molecule. This experiment, first performed by Lord Rayleigh, has lately been developed by Langmuir with highly interesting results.

The new science of radioactivity has contributed perhaps the most direct method of estimating the size of atoms. One of the characteristic properties of the element radium is that it continuously emits small particles—the alpha particles—which are projected from it with high velocity. These particles have been conclusively proved by Rutherford to be atoms of helium—one of the rarer gases of our atmosphere. The helium liberated per gram of radium has been measured and

amounts to 164 cu. mm. per year, or a bubble of gas about the size of a pea. Now the paths of these particles can be traced and the number emitted per second counted. This has been done by Rutherford, Madame Curie and others. We thus can find the number of atoms in our bubble and hence the mass of each atom.

I have selected these three methods for description not because they are the most accurate, but because they bring before us most clearly the reality of the atoms and molecules. Many other methods have been used with concordant results. I will not burden you with the calculations. The accompanying table gives the results of the most accurate determinations.

No. Molecules gas per c. c.
27,050000,000000,000000.
No. Molecules per gram mol.
606200,000000,000000,000000.
Mass of Hydrogen atom (grams)
.000000,000000,000000,000001,65
Kin. Energy Molecule per degree (ergs)
.000000,000000,000206
Charge on Monovalent atom
.000000,000477 electrostatic unit
or .000000,000000,000000,159 coulomb

These numbers are utterly beyond our power to grasp, even in these days when we talk fluently of billions. Suffice it to say that an atom is as much smaller than a tennis ball as a tennis ball is smaller than the earth, and that if we were to attempt to count the number of molecules in a single drop of water it would take the whole population of the globe 50,000 years to complete the task. It is a great achievement of science and one in which America has had no small share, to have determined these quantities, so that we now know the weight of an atom as accurately as we do that of a pound of sugar or coffee we purchase from our grocer.

We have seen how at the beginning of the nineteenth century the genius of Dalton crystallized the atomic theory into

a definite form, and how in the middle of the century the next great step was taken when the atoms were endowed with motion, and the kinetic theory threw light on many fields of physical science. It was reserved for the close of the century to witness the opening of a new field of inquiry—the investigation of the structure of the atom.

The suggestion that an atom has structure seems at first sight a contradiction in terms. However, it had been recognized by many that while the atom was an indivisible unit in chemical changes, it could not be the hard structureless particle pictured of old. Indeed, we have the oft-quoted saying of Rowland that an atom was as complicated as a grand piano. Little light, however, was thrown on its structure until almost simultaneously about 1897 the discovery of the electron and the discovery of radioactivity formed the starting-point of researches which have penetrated into the interior of the atom and which have as well profoundly modified our views as to the nature of electricity.

The story of the discovery of the electron has often been told. I need here only remind you of the results. The electrons are negatively charged particles about 1800 times lighter than the lightest atom and some hundred thousand times smaller in diameter. They are found to exist as constituents of atoms vibrating or circling in orbits. They are also set free from matter by a powerful electric field, by ultra-violet light or by high temperature. From the radioactive substances they are emitted spontaneously with enormous velocities. And wherever found and from whatever source derived their properties are identical. Furthermore their charge is always negative, as the only positively charged particles have proved to be atoms or groups of atoms.

These results emphasize the electrical nature of the atoms and of the forces which bind them together, and have led to a theory of atomic structure, which is in fact a development of the theory of electricity long ago proposed by Franklin. Since electrons, which are negative, are found in atoms, and under certain conditions escape, the atom when freed from

electrons must be positively charged. On the other hand, if additional electrons attach themselves to an atom it becomes negatively charged. We thus come to regard the atom as made up of two constituents, the positive material part or substance, which contains most of the mass of the atom, and the much lighter but highly concentrated detachable negative electrons. When an atom contains an equalizing amount of electrons it is neutral, as for example an atom of helium gas. An excess or deficiency of electrons leaves the atom negatively or positively charged, and so capable of attracting and attaching itself to other atoms, forming a molecule. In this way many of the physical and electrical properties of matter have been sucessfully interpreted.

Can we go further and form a more definite picture as to the internal structure of an atom? The first important attempt was made by Lord Kelvin and afterwards modified and elaborated by Sir Joseph Thomson and is generally known as the Thomson atom.

This atom is assumed to consist of an approximately spherical volume of atomic size, in which is uniformly distributed the positive charge. Scattered through this volume are a number of minute electrons which are kept apart by their mutual repulsion but are held in place by their attraction for the positive charge. Calculation shows that under these conditions the electrons will distribute themselves in rings, and according to Thomson they are in rapid rotation in these rings about the centre of the atom.

It was at first conjectured that the number of electrons was very large—so that the whole mass of the atom was accounted for by that of the electrons. Thus if 1800 electrons were present in a neutralizing sphere, the mass of the electrons would amount to that of a hydrogen atom. If a single electron were lost or added we should have a positively or negatively charged hydrogen ion, but the mass would not be measurably altered. This view was attractive for the simplicity of its interpretation of the mass of the atom. But it was later found that there were far fewer than 1800 electrons in a

hydrogen atom—perhaps only one or two—so it became necessary to ascribe the major portion of the mass of the atom to the positive sphere.

The Thomson atom proved highly stimulating and suggestive. Finally, however, it was shown by Rutherford to be inconsistent with certain experimental results which he obtained from the study of the alpha particles, and consequently it gave place to the Rutherford atom.

The Rutherford atom differs from the Thomson atom in that the positive part, instead of being distributed throughout the atom, is concentrated in a nucleus, which is much smaller even than an electron. This nucleus acts like a central sun to the electrons, holding them in their orbits, and although so much smaller than the electrons, is much more massive. Thus a hydrogen atom would be regarded as a single electron circulating in an orbit around a central nucleus 1800 times heavier, but of a diameter perhaps 1800 times smaller. In larger atoms the nuclei are more massive, carry a greater charge and are surrounded by a correspondingly larger number of electrons.

A modification of the Rutherford atom has recently been proposed by the brilliant Danish physicist Bohr. The difficulty connected with the Rutherford atom is that it would lack permanence, for the circling electrons would gradually lose their energy by radiation and could not therefore keep their orbits. Bohr supposes that each electron has a number of orbits in which it can circulate. As long as it remains in a given orbit it is assumed not to radiate at all, but it may pass from orbit to orbit and in doing so emit (or absorb) radiation of a frequency, i. e., of a color dependent on the size of the orbits. The assumptions on which the Bohr atom is based are very radical, and there are still many outstanding difficulties connected with it, but it is generally regarded as up to the present the last word in atoms.

But even when the outstanding inconsistencies have been removed we shall not have reached the end of our inquiry. In fact, there is no end. Each step in advance has opened up new

suggestions to be investigated. Thus we have learned that the principal properties of an element are determined by the character of the atomic nucleus, insignificant though it is in size even compared with the atom. Of what nature is this nucleus? The phenomena of radioactivity indicate that it is extremely complex. To unravel this complexity is one of the most interesting problems of twentieth century science. And when unraveled there will doubtless be new problems of equal difficulty and of equal interest to solve. And so even as the astronomer when he searches into the infinities of space, we feel how Nature is boundless:

"Boundless inward in the atom, boundless outward in the whole."

LOPE DE VEGA, SPAIN'S GREATEST DRAMATIST

By Hugo A. Rennert

Professor of Romanic Languages and Literatures

The lives of men of genius have always had a singular attraction. Whether they be soldiers, statesmen or men of letters, the nimbus of fame by which they are surrounded, places them in a category apart, and despite their glory, we see them only as through a glass, dimly. We imagine that their everyday lives must differ greatly from the life of an ordinary mortal; that something out of the common attaches to their every deed and action. When the veil is lifted, however, we are apt to suffer an immense disappointment.

It is a serious question whether the world has been benefited by the revelations that have been made of the private lives of men of genius. Confining ourselves to men of letters, there are certainly few whose intimate lives have not shown that they are subject to all the frailties to which man is heir. Byron and Shelley, Musset and Maupassant have certainly risen no higher in the world's esteem as a result of what is known of their private lives. The letters of Robert Burns are not always edifying reading, and even the great Shakspeare has not escaped unscathed, if we are to accept the conclusions arrived at by Mr. Frank Harris, in his book "The Man Shakspeare." Minute investigations into the lives of poets have a justification only if made with the purpose of throwing light upon their works. Here all knowledge is entirely legitimate; not so when the object is merely to gratify the cravings of a morbid curiosity.

If we turn to the literature of Spain we find that the sublime, heroic figure of Cervantes,—the greatest Spaniard of them all—was not unsmirched by scandal. The devout, austere Calderon, the author of the "Starry Autos"—as Shelley calls them—the poet *par excellence* of Spanish Catholicism, was not free from human weaknesses; and, coming to the great

poet in whom we are especially interested today, the investigations of scholars have revealed that, though a priest, his life was far from exemplary. Still, it should always be borne in mind that his was a very different age from ours, and by its standards, and not by ours, should he be judged.

Lope Felix de Vega Carpio was born on November 25, 1562, at Madrid, the son of Felix de Vega and Francisca Fernandez Flores. His parents were natives of the Valley of Carriedo, in the Asturias, and had only removed to Madrid in the very year in which Lope was born. Lope's father was an embroiderer by profession; he seems also to have made verses, and his famous son pays him a beautiful tribute in his *Laurel de Apolo,* saying generously that the father's verses seemed to him better than his own. The father possessed a rare Christian spirit, and we are told that he made the beds, swept the passages and washed the feet and hands of the poor in one of the hospitals of Madrid. He died on August 17, 1578. Besides Lope, who was the eldest child, Felix de Vega left another son, who as *alférez* or ensign, accompanied Lope on the disastrous expeditions of the *Armada* to England, in 1588, whence he never returned, and two daughters, Isabel de Carpio, who died in 1601, and Juliana, who was baptized on January 8, 1565, but of whom nothing further is known. Lope had, moreover, a niece, Luisa de Vega, and also a nephew, a friar.

While we sometimes read of the "noble highland blood," of Lope's family, he himself speaks of his "humble blood," and of the humble house of his parents, although in his earliest printed work, the *Arcadia,* we find the poet's portrait, and beneath it the Arms of Bernardo del Carpio—nineteen towers on a shield—for which he was taken to task by his arch-enemy, the poet Góngora.

We know almost nothing of Lope's early childhood. In the dedication of his play *La Hermosa Ester* he refers gratefully to his uncle, the Inquisitor D. Miguel del Carpio, "of noble and saintly memory, in whose house [in Seville] I passed some of the earliest days of my life." While this might imply

that Lope had lost his parents while he was still very young, we have seen that his father died in 1578, when the poet was sixteen years old. Lope wrote a sonnet on his father's death, which is printed in his *Rimas* (1602), and alludes to his mother —though he does not name her—in his eclogue *Amarilis,* and mentions her in a letter to his patron, the Duke of Sessa; these are the only references to his mother, so far as I know, in the whole *mare magnum* of his works.

According to his own testimony in his trial for libel, to which reference will be made later, "he studied grammar [i. e. Latin] in the *Colegio de los Teatinos* in Madrid. We learn something of his early years from his *Dorotea,* which he wrote while a young man (in 1587 or 1588), but revised late in life, and which he did not publish till 1632, three years before his death. This drama in prose is undoubtedly auto-biographical, to a certain extent; but the characters are purposely confused, to throw the reader off the track. Herein he tells us that he went to the University of Alcalá at the age of ten. "At this time," he says, "I knew grammar, and was not ignorant of rhetoric, but found that I had the greatest aptitude for making verses, which I wrote in Latin and Castilian. I had a good knowledge of Latin, knew Italian well, and was acquainted with French." These statements are amply confirmed by his later works. An examination of the registers of the University of Alcalá, between 1572 and 1584, has failed to reveal the name of Lope de Vega. Still, his own assertions are so unequivocal, that there can hardly be any doubt upon this point. He was, for a time, in the household of the Bishop of Avila, to whose favor and protection he alludes with gratitude, and to whom he owed the privilege of studying at the university.

Lope was a most precocious child. His earliest biographer, the pious Montalvan, a disciple of Lope's, tells us that at the age of five he read Spanish and Latin, and such was his inclination for verse-making, that, while he was yet unable to write, he would share his breakfast with the older boys, in order to get them to write down what he would dictate. According to another biographer, La Barrera, "in his tenderest

youth," probably when he was ten years old, he translated Claudian's Latin poem *De Raptu Proserpinæ* into Castilian verse, dedicating it to Cardinal Colonna.

Lope himself tells us that he wrote comedias at the age of eleven or twelve, and says, moreover, that *El verdadero Amante* is his earliest comedia. This play still survives, though certainly not in the state in which it was originally written, for, as we have it, it is in three acts, while in his *New Art of Writing Plays* he says that his earliest productions were in four acts. The earliest play of Lope that has come down to us is probably *Los Hechos de Garcilaso de la Vega y Moro Tarfe,* which may now be read in Vol. XI of the Academy's edition of Lope. It is the only play we have, by the great poet, in four acts.

For the next events in the life of Lope we must turn to his *Dorotea.* I think it was Fauriel who first called attention to the auto-biographical character of this work, in the *Revue des deux Mondes,* in 1839, and the subject was afterwards elaborated by Ernest Lafond, in his *Etude Sur la Vie et les Oeuvres de Lope de Vega,* in 1857. The protagonist of the drama, *Dorotea,* is Elena Osorio, the daughter of one of the earliest theatrical managers in Spain, Jerónimo Velazquez. Fauriel rightly divined that the Fernando of the *Dorotea* was Lope himself, though he could not tell who the other characters really were. It was reserved for a Spanish scholar, Pérez Pastor, to identify them, who, through a lucky find, unearthed the proceedings in an action for criminal libel that was begun against our poet in 1587. According to Lope's account in the *Dorotea,* he was 17 years old when he first met Dorotea (i. e. Elena Osorio) in Madrid, and he tells us that this love affair lasted five years. This would fix the period between 1579 and 1584. But a difficulty immediately arises here. In his *Huerto deshecho* Lope tells us that at the age of 15 he took part in the expedition against the Portuguese on the island of Terceira, one of the Azores. Now this campaign lasted less than three months and it is known that the Spanish squadron, under D. Alvaro de Bazan, Marqués de Santa Cruz, set sail

from the port of Lisbon on June 23, 1583. So Lope must have been six years older than he represents himself to be. But this need not surprise us, for it was the practice of Lope throughout his life to represent himself as younger than he actually was; many instances in his writings prove this. The Spanish fleet returned from this expedition in September, 1583, disembarking at Cadiz, whence Lope returned to Madrid. We next hear of him as a contributor to the *Jardin espiritual* of Pedro de Padilla, printed at Madrid in 1584, and he also furnished verses for the *Cancionero* of Lopez Maldonado, licensed in April of the same year. At this time Cervantes, in his pastoral romance, the *Galatea* (published in 1585), mentions our poet among the most distinguished Spanish wits of the time.

At this period he began to devote himself with especial ardor to the theatre, and began to produce that vast repertory of plays, which, were it not well accredited, we might well think impossible for a man to have written in the course of a much longer lifetime than was vouchsafed to him.

Let us consider now, for a moment, one of the most important episodes in his strange career—the action for criminal libel that was brought against him by a famous theatrical manager, Jerónimo Velazquez, the father of Lope's sweetheart, Elena Osorio. The testimony taken in this case throws a curious light upon the life of the young poet at this time. We see him as a very frequent visitor to the theatres—in fact, he was arrested in the *Corral de la Cruz,* as one of the two chief theatres of Madrid was called, on the afternoon of December 29, 1587, and taken to the Royal prison. It appears that a libel, written in Latin macaronic verse had been circulated in the capital, in which the family of Velazquez was defamed and held up to ridicule. All the testimony of the various witnesses has been preserved, and on reading it there remains no doubt that Lope was the author of the libel. The testimony of Lope reveals a curious example of paltering with the truth. In his deposition, taken on January 9, 1588, he says that he is the son of Felix de Vega and Francisca del

Carpio, and that he is about 24 years old (in reality he was 25 years and four months old at the time), and that up to the present time he had been in the service of the Marqués de las Navas as secretary, and that he now resides in the house of his parents, as he did not wish to go to Alcántara, where the Marquis then was. It may be observed that it was quite customary at this time in Spain for young men of talent and ability to become secretary to some nobleman—an occupation which gave them plenty of leisure for other pursuits.

Lope, we shall see, afterwards became secretary to the Marquis of Malpica, and finally to the Duke of Sessa, who was his patron and friend till the end of the poet's life.

In his testimony Lope further stated that he had studied grammar in the School of the Theatines, and when asked whether he had written comedias, and had given them to theatrical managers, he replied that he wrote them, but that he did not deal in them; that he wrote them for his pastime, as did many other gentlemen of the capital, such as D. Luis de Vargas and others, who liked to write them for their entertainment, and that it is true that he wrote some and gave them to Velazquez and to other managers, that they might represent them. Asked whether he knew Elena Osorio, daughter of the said Velazquez, he replied that he knows her, and that he has spoken to her in conversations at her father's house, the various times that he was there, as others had done; that he knows that she is married; that he holds her to be a very reputable woman, and that he has always been of this opinion, adding finally that he and Velazquez were great friends.

We cannot dwell longer upon this important case, the upshot of which was that Lope was convicted and sentenced to banishment from the Court (Madrid) and five leagues therefrom, for a term of four years, under penalty of having the term doubled for any infraction of the sentence, and also to banishment from the kingdom (of Castile), for the term of two years under penalty of death for any infraction of the sentence, and that, moreover, he make no satires or

verses henceforth against any of the persons mentioned in the said satires or ballads, and that he may not pass through the street where the said woman lives.

It appears that after Lope was sent to prison, he continued from his cell to issue "infamous sonnets and satires," in which he especially attacked Elena Osorio, the daughter of Velazquez. Supplementary testimony was taken and at the command of the alcalde, Lope's trunk was searched and his papers taken. As a result of this additional testimony, Lope was haled into court on February 7, 1588, and the sentence of banishment from the court was doubled, making the term eight years, besides two years of exile from the Kingdom, and further decreed that any infraction of the latter sentence would be punished with death, while, as regards the former sentence, any infraction would be punished by the prisoner's being sent to serve his time in the galleys, at the oar and without pay.

On a petition presented by his accuser, Velazquez, in 1595, Lope was pardoned. Considerable testimony was taken and we learn some important facts in the life of our poet. A number of witnesses deposed that he passed the two years of banishment in the Kingdom of Valencia, where he continued to write for the theatre, and to furnish Porres, a theatrical manager, with plays. From Valencia Lope went to Toledo, and thence to Novés (Province of Toledo) and to Alba de Tormes, where he passed several years in the service of the Duke of Alba. It was here that he wrote his pastoral romance, the *Arcadia,* in which the Duke figures as Anfriso. From this stay of Lope in Valencia (1588-1590) dates the origin of what has been called the Valencian School of Dramatists; that school originated with Lope—it did not exist before Lope passed the two years of his exile in that city.

But a very important event in the life of our poet had happened in the meantime—his marriage to Doña Isabel de Urbina, a lady of noble family, daughter of D. Diego de Urbina, a *regidor* of Madrid, and King-at-Arms to Philip II. and Philip III. One of the witnesses at the hearing of the

petition of Velazquez to pardon Lope—an actor in the company of Lope's friend, Gaspar de Porres—deposed that during Lope's banishment (1588-1590) "he had seen Lope de Vega in the said city of Valencia with *his wife and family.*" This marriage of Lope had long been a much disputed question. But the fact is now settled by the discovery of a certificate of marriage, in which Luis de Rosicler "in the name and by virtue of a power of Lope de Vega Carpio" was married to Doña Isabel de Alderete.

This marriage of Lope by proxy took place on May 10, 1588, in Madrid. There is no doubt as to the identity of Isabel de Alderete and Isabel de Urbina. In the earliest of Lope's two wills (dated Madrid, February 4, 1627) he states that he had two children, Teodora and Antonia, then both deceased, by his first wife, Doña Isabel de Urbina.

But another curious fact is revealed by a petition made by Lope to the King in 1596, in which he entreats the clemency of the King, setting forth that because during the said banishment, being compelled by circumstances, he had entered Madrid and other places in violation of the terms of his banishment, he had thereby incurred penalties from which he begged to be relieved.

Now one of the reasons why Lope entered Madrid in violation of his sentence is undoubtedly explained by the following entry. In the General Inventory of Criminal Cases in the *Archivo de la Sala de Alcaldes de la Casa y Corte de S. M.*, on fol. 135, we read: "Lope de Vega, Ana de Atienza and Juan Chaves, Alguacil, for the abduction of Doña Isabel de Alderete." It has been conjectured that, because of the displeasure with which his own family looked upon this marriage, and the little affection which the Urbinas bore him, Lope's relations with Doña Isabel would grow cold and even cease. He therefore decided to abduct her and by this means obtain the consent of both families to the marriage. Why Lope's family (his father had been dead ten years), poor, obscure people, should object to the marriage is not easy to see. On the other hand, the Urbinas had good cause to look with the

greatest displeasure to such a union. The Urbinas were a family of distinction; the son-in-law, a young man of 26, of tarnished reputation, whose *liaison* with Elena Osorio had been the common gossip of Madrid, as Lope himself boastingly tells us.

But now we come to one of the strangest incidents of this very strange man's life. Lope enlisted in the Invincible Armada, which weighed anchor in the harbor of Lisbon on May 29, 1588, Lope embarking on the galleon *San Juan,* abandoning his young wife during their honeymoon. In one of the remarkably fine ballads which Lope wrote, in which his wife figures under the anagram of *Belisa,* the poet represents her:

> "Leaning on a lofty tower
> Which the sea surrounds and threatens,
> Gazing on the mighty vessels
> Which for England now are sailing."

Is it possible that the beautiful and unhappy Isabel contrived to make her way to Lisbon before the Armada sailed? Or is this only a fiction of the poet?

It is evident that Lope did not allow such an incident to prey upon him long. He dismissed it from his mind, for the present, at least, and turned once more to poetry, writing on board the *San Juan* his epic *"The Beauty of Angelica,"* in imitation of Ariosto, and using the verses he had written in praise of his old sweetheart, Elena Osorio, for gun-wadding.

What was left of the Invincible Armada returned to Spain in December of the same year, Lope disembarking at Cadiz, and going thence to Toledo, as he tells us. If he did this it was clearly an infraction of his sentence, which was punishable with death. He probably went to Valencia, where he settled down, and where, it is to be presumed, he passed some happy days with his young wife. After the two years of exile were passed, he entered the service of the young Duke of Alba, Don Antonio de Toledo, going with his wife to Alba de Tormes, the ancestral castle of the Dukes of Alba. Here his daughters Antonia (named for the Duke) and Teodora

were born. Both died young, and Doña Isabel only survived the birth of her daughter Teodora one year, as we learn from a Latin epitaph which Lope wrote on this daughter.

Lope tells us that his married life lasted seven years, and that his wife died at Alba de Tormes. Her death, therefore, took place in 1595; the exact date is unknown. Antonia died before 1602, for Lope mentions her as deceased in a sonnet published in this year. After the death of his wife Lope returned to Madrid, in 1595, and in the same year we find him figuring in a criminal trial on account of his relations with a certain Doña Antonia de Trillo.

Lope was now 33 years old, and was the foremost dramatist of Spain. During the next two years he continued to write, with incredible ease and rapidity, play after play, till, in November, 1597, the theatres were closed on account of the death of the Infanta Doña Catalina, daughter of Philip II., and this interdict was not raised till April, 1599. Lope took advantage of the closing of the threatres of Madrid by publishing his pastoral romance, the *Arcadia,* in 1598, the *Dragontea* in the same year, and his long poem *Isidro,* early in 1599.

In the meantime, Lope, in 1596, had become secretary to Marqués de Malpica, in whose service he remained but a short time, for towards the close of 1597, or early in 1598, he was engaged in a similar capacity by the Marqués de Sarria, afterward Count of Lemos.

On April 25, 1598, Lope was again married, this time to Doña Juana de Guardo, who brought him a dowry of 22,382 double reals plate. Her father, Antonio de Guardo, was a wealthy butcher, who supplied the city of Madrid with beef and salt pork. It has been hinted that this time Lope married for money, but all his subsequent actions prove that this imputation is wholly groundless. While Lope was frequently absent from Madrid during the first years following his marriage, and seems to have treated his wife, who was in poor health, with considerable indifference, after 1606 he treated

her with tender affection, as his letters to his patron, the Duke of Sessa, show.

Of this marriage the following children were born: Jacinta, baptized on July 26, 1599, who died in infancy; a child born shortly after August, 1604, but of which we have no further notice, and which probably died at birth, and Carlos Felix, baptized on March 28, 1606. This, the favorite child of his father, whose death was a terrible blow to him, was carried off in 1613, by a fever then prevalent in Madrid. He alludes to the death of his son Carlos in his *Filomena* in 1621, and again, three years later in his *Circe,* in some of the most beautiful verses that he has written and which show how keenly he felt his loss. There was, besides, another son, born between the tenth and the fifteenth of February, 1612, who seems, likewise, to have died at birth. Lastly, the daughter Feliciana, born at Madrid on August 4, 1613, whose birth caused the death of the mother. This is the only legitimate child of Lope that survived him. She was married in 1633 to Luis Usátegui, and had two children, Agustina and Luis de Usátegui y Vega. Agustina became a nun in the Convent of the Incarnation at Arévalo; the son became a captain of infantry and was stationed at Milan in 1674, when he sold the house in the Calle de Francos, in which his grandfather had passed the last years of his life, to an actress, Mariana Romero. With the death of this captain of infantry the direct line of the great poet came to an end.

We must return now to the beginning of the seventeenth century. We have seen that Lope's *Isidro* was published in 1599; four years afterward he gave to the press his *"Pilgrim In His Own Country,"* the dedication of which he signed on December 31, 1603, at Seville, where the book was issued early in the following year. Lope had evidently been some time in Seville seeing the work through the press. What induced him to issue this work in Seville? When did he leave Madrid for that city? We do not know the precise date, but we know that he was still in Madrid on January 25, 1602.

In that year he published the second part of his *Rimas,* together with his epic *"The Beauty of Angelica,"* and on reading this work we are struck by a number of beautiful sonnets, 24 in number, dedicated to *Camila Lucinda.* Moreover, in his epic there is an introductory poem, addressed to *Camila Lucinda,* in which occur the lines: "May God never help me, if I have not taken from you all that I say of Angelica." This epic, we have seen, was written in 1598, but not published till 1602. It is evident that the verses relating to Lucinda in Canto V, must have been interpolated at a later date. Our curiosity is naturally aroused as to the identity of this person. We learn from these sonnets that Lucinda was at one time living at Seville; moreover, in the *"Pilgrim In His Own Country"* there is an *epistola,* one of Lope's most perfect poems, in which he deplores the absence of Lucinda, and mentions two of her children, Mariana and Angelilla. The identification of this person has been made possible by the researches of Pérez Pastor. Lucinda was an actress, Micaela de Lujan, the first notice of whom appears in 1593, when her daughter, Micaela, was baptized in Madrid, as the child of Micaela de Lujan and Diego Diaz, also an actor. She is mentioned as a famous actress in 1612, though she had acted little in the capital; still, in 1602, we find her in the company of Pinedo, a great friend of Lope's, and she was then acting in Seville.

To be brief, the whole matter was cleared up by the publication of the certificate of baptism of Lope's son, named Lope Felix. Herein the child is described as the son of Lope de Vega Carpio and Micaela de Lujan. This son became an *alférez* or ensign in the army commanded by the Marqués de Santa Cruz, son of the famous captain, Don Alvaro de Bazan, under whom his father had fought at Terceira in 1583. Young Lope was drowned on an expedition to the island of Margarita (off the coast of Venezuela), the ship in which he sailed being wrecked, and all on board lost. Previous to this, in 1605, Lucinda bore Lope a daughter, Marcela, who became a nun and died in the Trinitarian Con-

vent at Madrid on January 9, 1688, at the age of 83. Lope mentions her in his writings as Doña Marcela del Carpio.

This was, essentially, all that was known of Micaela de Lujan, or Camila Lucinda, until three years ago, when the distinguished scholar, Francisco Rodríguez Marín published in the *Boletin de la Real Academia Española* a remarkable document discovered in the archives of Seville. It is a petition, dated January 10, 1604, of Micaela de Lujan, widow of Diego Diaz, from which we learn that Micaela had the following children: Agustina, Dionisia, Angela, Jacinta, Mariana, Juan and Felix, minors, and that the said husband had died in the Indies. The petition begs that the mother be named guardian and administrator of their persons and effects. The estate amounted to about 800 ducats, and the petitioner offered as surety Lope de Vega, "residing in this city," in the amount of 1,000 ducats. The petition was granted, and one of the witnesses was Mateo Aleman, author of the famous picaresque novel *Guzman de Alfarache,* who declared that he knew the said Micaela de Lujan and Lope de Vega, and that the latter "was a wealthy and fit person to be the surety of Micaela de Lujan, because he knew him to be the possessor of two houses in Madrid worth 2,000 ducats, more or less."

We learn also that the husband, Diego Diaz de Castro, had made his last will in Cartagena de las Indias (then a city of Peru, now in Colombia, S. A.), on June 10, 1603, and, further, that Lope de Vega and Micaela de Lujan were living in the *Collacion de San Vicente,* in Seville. Further researches have revealed the certificate of baptism of the last-mentioned of these children, Felix, who was baptized on October 19, 1603, as the son of Diego Diaz and Micaela de Lujan.

Lope and Micaela de Lujan resided nearly the whole of 1603 in Seville, he returning to Toledo, where his wife was then living, in the summer of 1604. It is interesting to note that Micaela de Lujan was unable to sign her name, a further proof, if any were needed, that the verses which appear in Lope's works under her name, were written by him. She stated, moreover, on January 13, 1604, that the eldest of her

children, Agustina, was then fourteen years, and the youngest, Felix, three months old.

According to Sr. Cotarelo, in an article published in the Bulletin of the Spanish Academy, the children of Lope de Vega and Micaela de Lujan were the following: (1) Juan, born about 1601, died in infancy. (2) Felix, born October 9, 1603. (3) Marcela, probably born in 1605. (4) Lope Felix, born January 28, 1607.

We do not know when Micaela de Lujan died; she was still living in 1612, according to Suarez de Figueroa, but she was, it appears, no longer living in 1614, when Lope took to his home his two children, Marcela and Lope.

Naturally, one asks what, during all this time, became of the patient and long suffering wife? We hear nothing of her save that she was living at Toledo. It appears that Lope and his family did not return to Madrid till 1610. The cause of this absence from the capital is not known. The Court was removed to Valladolid in 1601, and did not return to Madrid till 1606, and this may be the reason for Lope's absence. But why he chose Toledo, when his own home and that of his wife's family was Madrid, remains unexplained.

During the intervening years, since the publication of his long poem *Isidro* (1599), Lope had been writing constantly for the stage, producing play after play with marvellous rapidity. In 1609 he published his epic *La Jerusalem Conquistada,* written under the inspiration of Tasso's brilliant epic. In the dedication he tells us that the work appears after a long delay, "because of books without learning, substance or wit, which he had written for the crowd." The work was not successful, and proved that Lope's genius was not epical in any sense. He was much more attractive in the lyric or the pastoral, while his true vein, in which he was foremost, and in which he achieved an enduring greatness, is the drama.

In the same year there appeared in his *Rimas* a poem entitled *"The New Art of Writing Plays,"* a work of great importance, for it is a defense of the irregularities of his

comedias, and of their violation of "the rules." Lope purposely disregarded the "rules of art," and wrote to please the people—the common crowd—the *vulgo,* as he calls it, which he never loses an opportunity to tell us that he despised.

In September, 1610, Lope bought a house in the Calle de Francos, Madrid, in which he resided till his death. There was a garden attached to the house, and here he spent his idle moments (if such a man may be said to have any idle moments) in cultivating his flowers. Writing to the Count of Lemos ten years afterwards, he says: "Among my books and the flowers in my garden, I pass what may still remain of life, which cannot be much." He describes his garden in an *epistola,* entitled "The Garden of Lope de Vega." "It contains," he says, "two trees, ten flowers, two vines, an orange bush, and a white musk rose; a fountain and two young nightingales." Over the lintel of his house was the inscription:

Parva propria, magna
Magna aliena, parva.

Here, we may hope, Lope passed many happy hours with his faithful wife and his little son Carlos, though his happiness was rudely shattered only two years afterwards by the death of this son, when, in his own words, "Cruel death snatched from my hands all rest, all remedy and hope."

In 1605 Lope became secretary to the Duke of Sessa, which was the beginning of that long friendship with his patron that was ended only by the poet's death. Henceforth the Duke plays an important part in the life of Lope, who never hesitated to call upon his patron for all sorts of favors, which, moreover, as far as we know, were never refused. The theaters having again been closed in October, 1611, on account of the death of Doña Margarita of Austria, wife of Philip III., Lope availed himself of the opportunity to issue his *"Shepherds of Bethlehem,"* a volume of religious prose and verse, dedicated to his little son Carlos, which was published in 1612.

In this same year Carlos died, and on August 13, of the following year, Lope's wife, Doña Juana, died in giving birth to her daughter Feliciana.

Lope now took a step for which, as his life hitherto has proved, he was utterly unfitted. The death of his wife and son had turned his thoughts to religion, and he now resolved to take orders. His conscience doubtless sounded a warning once in a while; he had occasional pangs of remorse, but the Lope of old was unchanged. A proof of it is that five weeks after the burial of Doña Juana we find him in Segovia, lodged in the house of the celebrated actress, Jerónima de Burgos, for whom, in the same year he wrote one of his best comedies, *La Dama boba.* Still, he determined to enter the priesthood, though he evidently never contemplated ceasing to write for the stage. We learn from a letter of Lope's to the Duke of Sessa, that at this time Marcela and the little son Lopito were at their father's house in charge of the housekeeper Catalina.

Lope was doubtless sincere in taking the step to the priesthood, and he made determined efforts to free himself of his old associations. He had been in the habit for some years of writing the Duke's letters to his various *amigas.* He now begged the Duke to release him from this duty. In a letter dated June, 1614, he writes to the Duke: "I again entreat you by the blood which Christ shed upon the cross, do not bid me offend Him in this, nor let my having preserved this friendship seem a slight sin to you. . . . Your Excellency has no need of me, who have served you day and night in everything that you have commanded me, without considering myself, so that I might not fail one jot in your pleasure, and I wonder now that you hold yourself ill-served by me, for on this occasion, since the first day, against the safety of my soul I have continued an affair that has arrived at such a point that your Excellency leaves his house. I want no part in this, but desire to serve you in lawful things. . . . I have not deceived you, for many days ago I told you the cause, and these are not scruples, but sins for which I may not find

the grace of God, which is what I now desire." This letter needs no comment. It reveals the mental anguish of the wretched priest in this conflict between duty and friendship.

Lope said his first mass in September, 1614, having a short time previously published his *Rimas Sacras* (Devotional poems). But he could not shake off his old mode of life.

In the spring of 1615 Lope was in Segovia, where he found the theatrical company of Sanchez, in which Lucia de Salcedo was then acting. She it was who first wrecked all Lope's good intentions. After his return to Madrid he suddenly, in June, 1616, left for Valencia, alleging in a letter to the Duke of Sessa that he had undertaken the journey for the purpose of visiting his *son,* a Franciscan friar! This is the first notice we have of this son, who was, according to the conjecture of La Barrera, Vicente Pellicer, and who had published a poem in thirty-one octaves, in Madrid, in 1614.

The truth of the matter was, however, that Lope had gone to Valencia to see Lucia de Salcedo. This affair lasted till the autumn of 1616, when we find our poet on with a new love—Doña Marta de Nevares Santoyo, the wife of Roque Hernandez de Ayala.

Nothing in Lope's whole career is quite so discreditable to him as this story. The Duke of Sessa, Juan de Piña, a Familiar of the Holy Office, and Lope's friend, Medinilla, all combined to hoodwink the husband, who seems, moreover, to have been a very complacent sort of person.

Lope was now fifty-four years old, and a priest. Still, no attempt seems to have been made to conceal anything; the whole affair was carried on with an utter disregard of public opinion. But he did not go unpunished, and suffered bitterly for his conduct before his death. Doña Marta, whom he met for the first time when she was twenty-six years old, he celebrated in his verses under the name of *Amarilis;* he sang her praises in one of his finest eclogues, and dedicated to her, under the name of Marcia Leonarda, four novels which he wrote at this time. In August, 1617, Lope's daughter, Antonia Clara, was baptized as the child of Doña Marta and her husband, Roque de Ayala,

the godfather being the Conde de Cabra, eldest son of his patron, the Duke of Sessa.

Doña Marta died in 1632, when Lope took his daughter Antonia Clara to his house, where she lived with her half-sister Feliciana, then nineteen years old. Feliciana was married in the following year (1633) to Luis de Usátegui. But Antonia Clara was to embitter the last days of her father, repaying his deep affection with the basest ingratitude. She fell in love with a gallant of much superior station, with whom she eloped in 1634, when she was seventeen years old. Lope describes his grief and the base conduct of his daughter in two poems, the *Huerto desecho,* and the eclogue *Filis.*

In after years Antonia Clara shared the paternal house with her sister Filiciana, who died in 1657, Antonia dying in 1664.

Lope's life was now drawing rapidly to a close. His health was failing and he felt that the end was not far off. His last moments are described by his friend and biographer, Montalvan.

On Friday, August 24, 1635, he arose early, said mass, and then shut himself up in his study. At noon he felt chilled, probably, as his family assert, because of a discipline which he had administered to himself (as was his custom every Friday, in memory of Christ our Lord), and which was proved by the walls of the room whereto he retired, which were flecked with blood, and also by the discipline, which was stained with fresh blood. On the night of August 26, it being evident that he was beyond all human help, the Viaticum was administered to him, and two hours afterward they gave him the last remedy, Extreme Unction. On the next day, Monday, August 27, he was so weak that he was unable to speak, and at 5 o'clock in the afternoon, with a crucifix in his hand and a fervent prayer on his lips, he breathed his last.

The funeral rites were most elaborate and impressive, and were arranged by his patron and testamentary executor, the Duke of Sessa. All Madrid shared in the grief, and great crowds thronged the streets, making them impassable. Lope's body was deposited in the Church of San Sebastian, in the

Calle de Atocha. His remains, however, were removed in the early part of the nineteenth century, during a cleaning or removal of dead bodies, which took place periodically, and, having been confused, through carelessness, the present resting place of the great poet is unknown.

A whole volume of panegyrics on the dead master was published by Lope's friend and disciple Montalvan, though in the list of contributors some of his most eminent contemporaries, especially the dramatists, are conspicuous by their absence. We need not wonder at this. Lope was the greatest dramatic genius that Spain has produced, and we may well ascribe the silence of his rivals to pure envy. It may be safely assumed that, instead of grieving, they rejoiced at the passing of their greatest competitor.

And yet Lope was a most benevolent despot. He treated his fellow-poets with uncommon magnanimity. In one of his poems he says:

"That most divine sentence, 'Thou shalt honor
Thy father and thy mother,' doth extend
To every member of the human race.
Not to the good was e'er my pen ungrateful,—
Hyperboles did the superior merit,
And well I treat e'en those who served me ill.
I praise a thousand most unworthy writers,
Who, seeing themselves thus praised, with arrogance
Usurp a lordship o'er their fellow-men."

It is impossible, within the time at my disposal, to discuss, even in the barest outline, Lope's marvellous achievement. No poet before, or since, has ever been endowed with such universal gifts as he. He attempted every class of poetical composition, and, naturally, with varying success. In the old Spanish measures, particularly the *letrilla* and the *romance* or ballad, Lope was a master, and only his old rival, Góngora, at his best, could dispute his supremacy.

But Lope's fame, after all, rests upon his comedias, and in this field his immortality is assured. He found the drama

a weak and groping thing, and raised it to its greatest vigor and perfection. Of the 1,500 plays he is said to have written, and of which nearly 500 survive, not all are good, nor will his most ardent admirers make this claim for them, but there is not one, even the poorest, that does not contain passages which only a genius could have written. Lope wrote too rapidly; the verses flowed from his pen spontaneously, without the slightest effort. Life was too short to file and polish them. It was easier to write a new play. He dashed them off for the purposes of the hour, and was content to let them go as his first inspiration dictated. But he was as God made him, and, with all his marvellous gifts, he was human and had more than his share of the sins inherent in human kind.

It is to these shortcomings only that we have referred in this sketch of his life, and herein we do him a great injustice. To do this, is to imitate the critic who singles out the faults of a work without a word of praise for its excellent qualities, and of admirable qualities Lope had many. He was kind, forgiving, magnanimous, and exceedingly charitable; giving always with an open hand, so that he often lacked the necessities of his household, and died poor. He made no claim to being a bundle of perfections; he was a mighty poet, and, as such, his name will shine with undiminished lustre in the small galaxy of immortals.

THE GREAT NATIONAL RISING OF THE NATIVE EGYPTIANS AGAINST THE PTOLEMAIC DYNASTY

By W. Max Müller

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The history of the Ptolemies, the Graeco-Macedonian kings of Egypt who ruled from 305 to 31 B. C., is generally believed to be one of the best known chapters of ancient history. It is true we know the succession and chronology of the kings very well and a good deal about their wars and enterprises, especially those outside of Egypt. On closer examination, however, the deplorable onesidedness of our knowledge becomes apparent. We possess practically only a history of Alexandria —not of Egypt—and this entirely from the Greek point of view. The Greeks, of course, concentrated their interest in Egypt on that largest city of the Hellenic world, the center of art, literature and commerce; the rest of the Nile-land and the vast majority of its population seemed unimportant and was rarely considered in the Greek writers. From this silence modern historians, until quite recently, have drawn very incorrect conclusions about the condition of the Egyptian natives under the Ptolemaic rule, interpreting silence too much as a favorable indication. Therefore, we still find the time of the Ptolemies in many books described as the golden age of Egypt, a period of unparalleled prosperity and happiness for all its inhabitants, during which the Egyptians gave themselves willingly to the illuminating influence of Greek culture, grateful for the mild rule and the religious liberty accorded to them by the Ptolemaic kings. To enforce this beautiful fancy, that golden age is usually contrasted with the previous two centuries of Persian rule, which are painted in the darkest possible colors, as a time of cruel oppression, especially of religious intolerance, so that the poor, ill-treated Egyptians,

notwithstanding their patient character, had to rise repeatedly in desperate rebellion against their tyrannical rulers.

The critical historian is now able to correct both of these popular misrepresentations. As for the Persians, their dominion over Egypt seems to have been rather mild, at least, they tried to keep the country in the same condition in which they found it at the time of the conquest, leaving to the natives their own institutions and officials, and interfering in no way with their language and customs, least of all with their religion. We must not forget that religious intolerance was hardly known to the heathenish systems of religion; the fables of Herodotus about the mad tyranny of Cambyses persecuting the gods of Egypt ought not to have deceived anybody. The frequent revolts of the Egyptians against the Persian kings seem rather to have been caused by that extreme conservatism towards the institutions of their subjects mentioned above and by the laxity of their rule, which also spared unwisely the dangerous element to be mentioned below.

Much more, even, has the Macedonian dominion been misrepresented in the opposite direction. Above all, it must be emphasized that the ruling European element and the dusky natives were so widely different in race, language, manners and religion that for the first two centuries we cannot exaggerate the wideness of the gulf between them. Both elements mixed hardly better than oil and water, a modern writer has said lately. To the Greeks the strange customs of their dark subjects were a source of wonder and derision; notwithstanding the admission of some knowledge of their own, the Egyptians were considered as a barbarous and inferior race. These retaliated on their conquerors by looking at them as religiously unclean barbarians, whose touch even defiled. Thus the relation of the ruling and the conquered race must have been as strange as in Judæa under the Roman governors, or as in modern East India. The separation was not quite so sharp in religion, for the Greeks, as pagans, would treat the creed of the natives with some respect and would not mind depositing an offering at the shrine of the Egyptian gods, but,

after all, these were not their gods and they had a religion of their own. The high esteem of the mysterious Egyptian religion which developed in Roman time outside of Egypt, especially in Europe, did not yet exist.

Of course, these differences of the two races are hidden as much as possible in the inscriptions and papyri, and only here and there we find faint traces of antagonism. Notwithstanding those deceptive efforts, the legal documents, however, reveal to us the complete legal inequality of the two races. The great historian Mommsen already had wondered that even in later Roman time this inequality existed and was reflected, *e. g.,* in the different punishment, the Greek or Roman offender being beaten with the stick, while the Egyptian criminal was chastised with the raw-hide whip, not because it tore more flesh away, but because it brought disgrace compared with the "decent, civic beating." Mommsen concluded correctly that the Greeks must have treated the Egyptians in a way which was not repeated with the natives in any of the Hellenistic countries. We may be sure that the legal distinction of the races was practically far greater when the Graeco-Macedonians themselves ruled over Egypt. So it seems that, to use a modern expression, they "carried white man's burden" there as openly and thoroughly as possible. In the sculptures of the Egyptian temples, of course, the Ptolmaic kings pretend to be full imitators of the ancient Pharaohs, but the same fiction was maintained of the Persian kings and Roman emperors, and means nothing but that the government always permitted the natives to build, to repair and to maintain the necessary temples from their own taxes. Plutarch's remark about Cleopatra's rare gifts as including even knowledge of the Egyptian language, may be interpreted as an indication that the kings of the Lagide family condescended quite rarely to learn the barbarous tongue of their subjects. Anyhow, these kings hardly left Alexandria, which was an exclusively Greek city as said above.

From the interesting and rich finds in the modern museum of Alexandria the existence of only a small and poor quarter of

natives can be concluded for the old capital, a quarter which contained, probably, only laborers of the lowest class. The Egyptian designation of Alexandria, "the wall" or "the fortress of Alexander," may reflect this exclusive character of the city, which must have appeared to the Egyptians as a foreign intrusion. The Greeks dispersed through the rest of Egypt were all officials, soldiers or merchants, forming quite a distinct class of population from the Egyptians who represented mostly the agricultural element. This most numerous and poorer class felt the absence of any paternal character in the Graeco-Macedonian government very badly, bearing the chief burden, beyond their numeral proportion. They were used to foreign rule, it is true, for long before the prophet of Israel threatened the Egyptians that they never would have a ruler of their own blood, the Pharaohs were mostly foreign soldiers, and neither these nor the earlier native kings had spoiled their subjects with regard to taxation and socage. The Ptolemaic kings, however, reached the limit in extortioning from the country, i. e., almost exclusively from the agricultural natives (corresponding to the modern Fellahîn) the utmost amount of state income, and this, more than anything else, makes us wonder that the Egyptians bore the yoke of those foreigners so long.

It is true the Egyptian Fellahîn represent one of the most patient and unwarlike races in the whole world. They never were warriors and hardly ever will become warriors. Strabo wondered that, in the time of Augustus, a few hundred Roman soldiers in the frontier garrisons sufficed to keep that populous land under control, and the English occupation of Egypt in our days maintained the very unwilling loyalty of the natives with just as small forces. In the time of the Ptolemies there existed, however, one dangerous element: the remnants of the old warrior class. These were not a caste like the warriors of the Hindus, although they were mostly descendants of foreign mercenaries, chiefly Libyans, which the ancient Pharaohs had settled in Egypt. The oldest son of each warrior family inherited the fief in land, and, with it, the duty

to serve in war; the other sons chose various occupations. When the fief became vacant, the government appointed a successor to that desirable estate. It seems that these successors were often natives; also, by constant intermarriage the warriors had long lost their foreign racial characteristics. Nevertheless, the feeling that they were a distinct and superior class always sufficed to keep them more manly and warlike than the rest of the natives, exactly as the Mamluks as an aristocracy maintained their warlike character from the Middle Ages to Napoleon's time, notwithstanding the absorption of much Egyptian blood. The Persians had left the institution and the privileges of that warrior class intact; as said above, we have indications that they had to pay dear for this conservatism in the repeated insurrections of the Egyptians. Nevertheless, that institution still survived in Ptolemaic time. The Greek government, some scholars think, distrusted the warriors from the beginning and did not use them for military service at all. I find in Diodorus a creditable report that Ptolemy I. had employed some native soldiers in his wars, but this experiment was not often repeated, it seems. Probably the native soldiers soon revealed their dangerous character. Alone they were not numerous enough to threaten the Greek rulers seriously, for the numbers given by Herodotus, etc., are manifestly fanciful exaggerations, but they could easily become leaders of the other natives against the hated foreigners.

By that prudent caution in the use of the warriors the Alexandrian kings seem to have avoided serious trouble for a long time. The crisis came when the fourth Ptolemy, Philopator, against a threatening invasion of Egypt by Antiochus III. of Syria, had risked concentrating, in 217 B. C., a larger number of native warriors. These twenty thousand soldiers fought with distinction in the great battle at Raphia, on the southern frontier of Palestine, and by this success, and even by their concentration, became conscious of their power. So they waited only for a leader and a pretext to raise the flag of rebellion, Polybius said. The "pretext," ac-

cording to his way of expression, seems to have been some economic measure of the Alexandrian government, such as new taxes or an interference with the special rights of the warrior class, not some personal fault of the tyrannical king. The rebellion probably broke out in Lower Egypt, where those warriors seem to have been settled most numerously; it may have happened a short time before the year 206, when the revolution is stated to have reigned in Upper Egypt. As said above, the warriors were not very numerous, but we may assume that most of the other natives gladly joined their rising against the foreigners. The serious character of that rising is sufficiently indicated by the designation which Polybius applies to it, "the war with the Egyptians;" a designation which is evidently much more correct than the official euphemism of the Alexandrian government, which spoke of that episode as "the disturbance."

We have almost no details on its earlier years; the climax seems to have been reached when Ptolemy IV. died, leaving behind only a five-year-old son. The generals and officials in Alexandria disputed with arms the tutorship of this infant king, Ptolemy V., Epiphanes, i. e., in reality the plundering of the royal treasury, while the king of Syria attacked and seized the Egyptian provinces in Asia. We must doubt if much territory outside of Alexandria remained faithful to the Macedonian government. The Greek inhabitants, probably everywhere, had to flee to the capital to escape the wrath of the native mob. However, the treasury in the capital still enabled the tutors to draw large forces of mercenaries from the Hellenistic countries, which they characteristically sent first against the Syrian king, evidently believing that the Egyptian insurgents were the less dangerous enemy. This judgment probably was based on the fact that the insurgents in Lower Egypt had no centralized leadership, but fought in small groups, by single counties, which could be overpowered one after another; the endless branches and canals of the Nile in the Delta served both as defence for the Egyptians and as disadvantageous separations, which prevented their

united resistance. Thus the Greeks gradually gained all of the Delta, after they had taken the fortified town of Lycopolis in the Eastern Delta, in 197 B. C., by a longer siege. This victory and some of the barbarous cruelties by which the Alexandrians tried to terrify the rebels into subjection are recorded in the famous trilingual decree of the Rosetta stone, but this document, which becomes fully intelligible only in the light of modern finds, shows also another side. Notwithstanding those military successes the government correctly saw that the old system of recklessly exploiting and ill-treating the natives could not be continued. So it offered them great concessions, above all, an amnesty to those who would leave the ranks of the insurgents, insuring, especially to the warriors, their fiefs of land, then cancellation of all debts to the government, i. e., of the taxes not paid during the insurrection, reduction or abolition of many taxes and oppressive measures (among the latter, e. g., the cruel pressing of natives as rowers for the royal war-galleys). The Greek government tried especially to win the priests by such reforms and by restoration of former privileges. A great concession to the national feeling of the Egyptians was that the young king was crowned, after the manner of the old Pharaohs, in the principal temple of Memphis, in 196 B. C. We may doubt if the former Ptolemaic kings in their Greek pride ever had condescended to such ceremonies.

Notwithstanding all this and the military efforts of the Alexandrians, the subjection of Egypt was effected very slowly. Upper Egypt remained absolutely independent to the end of the year 186 B. C. Two native kings, Harmah and Khamah, reigned there in succession for some twenty years, not as chiefs of roving bands (as some modern scholars would unwillingly admit, who were unable to believe that the ideal kingdom of the Ptolemies ever received such rude shocks), but as full imitators of the old Pharaohs, as their elaborate royal titles show. These titles, namely, have been found on some demotic contracts which escaped the general rewriting and redating of legal documents after the downfall of the

rebellion. We see from those documents that the native kings resided at Thebes and gave an orderly administration to the part of the country under their control. Owing to this uniform government, the Upper Egyptians were able to withstand the Greeks so much longer than their brethren in Lower Egypt, who had been divided under a considerable number of leaders, as shown above. In 186 B. C., however, the decisive struggle came. The Greeks had brought together a very large force of mercenaries from Europe and Asia, with which the General Aristonios, the son of Aristonikos, invaded the Thebaïs. Although the natives had concentrated all their forces and had drawn auxiliaries even from the Ethiopians, they lost the decisive battle. The crown prince of Thebes fell and the pretending king himself was captured. He and other captive leaders were brought to Alexandria and there executed, with the cruelty characteristic of that time. The country was now easily subjected, including the nearest district of Lower Nubia, adjoining the cataract of Syene; a punitive expedition was sent against more remote tribes of the Ethiopians in the South or East. The mass of the rebels, however, were treated with that moderation which had been shown after the subjection of Lower Egypt. At least, all the taxes of Upper Egypt lost by the insurrection were cancelled and the system of taxation was lightened in some ways in agreement with the reforms of 196 B. C. In general, we can notice, that from this time the Alexandrian government considered the native element more than before, and that, if not a fusion, at least a certain approachment of the two races was effected in the last hundred and fifty years of the Ptolemaic dynasty. This does not begin, as some scholars recently have thought, with the quarrels about the succession to the throne by the following Alexandrian kings; it seems to be a direct and far-reaching consequence of the hard lesson by which the Ptolemies had found out that the patience of the natives was not without limit and that it would be risky further to abuse it too inconsiderately. The dangerous element of the warriors seems to have been reduced and repressed gradually by quietly with-

drawing the vacant fiefs and giving these to Greeks; in later documents we no longer are able to distinguish between the settled Greek and native warriors. It is possible that the latter still had a part in the insurrection of Dionysius Petosiris in 167 B. C.; serious as this trouble was, it cannot be compared with the great national rising described above, being more local.

This unpleasant page of history was zealously obliterated by the government of Egypt from the first moment. A brief report of it was preserved in a chapter of the great Greek historian Polybius, a passage which, unfortunately, now is extant, only in mutilated extracts, so that its connection with the scanty allusions in the Rosetta inscription and in a papyrus of the museum in Turin for a long time was not recognized. It may be of interest to my hearers that the fullest contribution towards the reconstruction of this lost chapter of Egypt's inner history is now offered in some epigraphic results which I gained in 1910, on the island of Philae. Being sent there by the Carnegie Institution, of Washington, to glean a part of the inscriptions not exhausted by the expedition of the Berlin Academy to Philae, I directed my attention first to the decipherment of the two famous bilingual inscriptions in the court of the temple on that doomed island. These big inscriptions had been noticed by the very first Egyptologists, beginning with Champollion in 1828, and two attempts at a partial copying had been made, but a complete decipherment seemed impossible, owing to the multilated condition of the inscriptions. In a way analogous to the frequent re-using of books written on parchment, after scraping or washing off the first writing, the so-called palimpsest manuscripts, that wall had been used again by a later Ptolemy, in whose honor large pictures and hieroglyphs were chiseled over those long inscriptions from the time of Ptolemy V. What remains underneath visible from the original decrees required long and patient study, but like so many palimpsests on parchment which became legible under the microscope of scholars, also those palimpsests on stone finally could be deciphered sufficiently by application of the

proper amount of time. I believe that the results amply repay the long labor on that lonely spot, under the merciless summer sun of Nubia, which sent the thermometer to fantastic degrees, while the incredible changes of temperature made the nights even more trying. We have now a rather coherent text, first of the decree, in which the priests from all temples of Egypt hypocritically congratulated the king at the suppression of that impious rebellion, commemorating that blessed day of victory by a yearly festival. This text furnishes to us precious details about the end of the rebellion. The second decree supplements the former somewhat, thanking and honoring the king for the administrative reforms and the general mildness shown after the suppression of "the disturbance." It begins to show the wish of government and subjects to conceal the recollection of that sad episode as much as possible. The real reason for the reforms enumerated in that decree of thanks, the revolution, is carefully hidden and can be guessed by us only from the date of 184 B. C. Still, we have now sufficient material to reconstruct largely that chapter in the history of Egypt, which I suppose many of my hearers have found sufficiently new and interesting to make up for some lost beautiful illusions about the period of Graeco-Macedonian rule over the Nile-land.

EDUCATIONAL MEASUREMENTS

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Measurement is a necessary part of man's life. As civilization has progressed, crude and inexact measurements have been succeeded by those more and more refined and precise. Naturally, measurement of the material has reached a higher stage of development than the measurement of the mental and social facts and phenomena. The pound, the foot, the bushel, the dollar, are definite standards and units of measure that have universal meaning and are constantly used by millions of people. They enter into the everyday experience and thought of practically all adults. With such definite measures it is possible to measure with accuracy the result of effort and to judge efficiencies. Without such measures exchange would have to retrogress to the barter stage based upon guess as to quantities, and none but the crudest judgments as to efficiencies of producion would be possible.

In education we have until very recently gotten along entirely with crude makeshifts in measuring the amount of knowledge or skill possessed by a child or an adult, and most of our judgments are necessarily still upon such a basis. We say that a man is a college graduate, or more definitely, that he is a graduate of a particular institution. When there is need for a more exact statement, we say that his major was chemistry or Latin; or still more definitely, that while in college he took such and such courses under certain instructors and that he was given such and such marks.

But class marks are very crude measures. It has been demonstrated over and over again that instructors do not have the same concepts as to the significance of the various marks, that colleagues co-operating in giving the same course will vary considerably in their estimation of the value of a paper submitted in that course and that the same instructor

will, after he has forgotten his original mark, often give a different rating to the same paper and in some instances a mark much higher or lower. Furthermore, the tests upon the basis of which these marks are now given for the determination of quality of work in educational institutions vary greatly in difficulty from year to year; and finally, the differences in the relative values of the different parts of a test are merely guessed at or neglected altogether.

What is said of the college applies equally well to most of our high schools and elementary schools. Johnny is in the sixth grade. He supposedly knows as much arithmetic as his teacher in the fifth grade thought it was necessary for him to know to come up to her conception of the standard for passing pupils to the sixth grade. And so with his other studies. But those outside the system do not know the course of study, the teacher, the standards for passing pupils. Each is left to guess at what Johnny knows by referring to such a vague, indefinite subjective scale as he may happen to have in which is represented the stages—first grade knowledge and skill, second grade, third, fourth, fifth, sixth grade, and so on. The supervisor within the system is better off than they because he knows the course of study, the standard for passing the grade in whatever form they are expressed, and something of the ability of the teacher and of her conception of the standards for the grade, and so of the significance of the marks given by her. But, still, even he knows Johnny's ability only in somewhat the same vague sort of way. He can not express his ability in any skill or knowledge in precise terms which have universal significance. In consequence, when Johnny leaves and goes into another school system, the marks his former principal placed upon his certificate are reviewed with scant attention, and hastily consigned to the oblivion of the file labelled "Entrance Certificates," while Johnny is placed in the grade below that recorded on his certificate that he may be tested out.

There are fifteen million Johnnys and Marys attending the public schools of this country every day each year. A half

billion dollars is spent annually in their behalf. What are the efficiencies in this largest public undertaking? In how many places are the boys and girls advancing each year as they should in knowledge, character and skills; in how many cities and towns are the superintendents, principals and teachers getting a proper return for the money spent? When we stop to think of the large number of people engaged, of the large amount of money spent and of the tremendous importance of public schools in a democracy, it is astounding that the citizens of our country have had no satisfactory means of assuring themselves that their schools are efficient. At best they have had to take the word of the schoolmen whose judgments have been founded upon tradition, personal experience and current professional opinion. There has been much to throw doubt upon the validity of their judgments, and the fact that they were a party in interest has raised the presumption of prejudice and their word has not been taken at its face value. This lack of common medium of evaluation in which all have confidence and which all can understand, at least, in part, and which all can accept when the pursuance of a proper method of measurement is assured, has been a bar to progress. It has worked both ways to the schoolmen. The inefficient have been able to hold their positions and to do great harm upon the strength of their personal qualities, while the efficient have been unable to convince the people of the superior quality of their work for the lack of adequate measuring sticks.

We in America have been impatient of detail; we have in schools, as in business and industry and church, favored arbitrary management and the building up of a personal following that would enable one "to put the thing over" irrespective of whether it was the best way. But we are now passing from unsystematic, haphazard management based upon tradition, personal experiences, prejudices, hobbies, fads and whims, to the higher stage of systematic management by careful and exact comparison where we can establish standards of performance and administer our schools in accordance with the facts thus found to exist. We are even beginning to go still

further than this and to bring to bear to the solution of our educational, commercial and industrial problems all the knowledge that science can furnish and to study the various situations with scientific method. In time we may reasonably hope to have a scientific management of schools in which ascertained facts and relationships are exalted and through the knowledge of which there will be a minimum of error and of waste, a minimum of personal whim and prejudice, and a maximum of efficiencies within the school and a maximum of confidence and satisfaction among all persons, both within and without the system. The working out of impersonal, objective, precise instruments and methods of measuring the various elements involved in the conduct of schools is one of the first steps in the progress toward this much desired but difficult to attain goal.

It is my purpose today first to speak of the character and scope of some of the typical educational measures that have thus far been evolved, and second, to show their practical use.

The product of the schools may be defined as changes made in human beings produced by their own activity with the assistance and guidance of teachers. These changes take the forms of knowledge, skills, and character in the form of habit, interests and ideals. Most of the measures which have thus far been formulated are for the measurement of skills—the most tangible of the educational products, and have been confined to the subjects taught in the elementary and to a more limited extent to the subjects taught in the high schools.

The measurement of knowledge by means of scales furnishes greater difficulty and must wait for their practical use upon the evolution of measurement of the skills that are used in the acquirement of such knowledge. The measurement of habits, interests, and ideals presents still greater difficulty and may seem beyond the pale of measurement. Yet, as a matter of fact, we do compare these attributes of human life and rank them, or in other words, measure them. Doubtless this procedure may be made more exact through the attachment of

values to definite, objective representations of the traits in question. And when this is done, we may be said to measure, although not so precisely as in the case of skills and still less than in the case of material things. Nevertheless, through the use of such scales we shall think more accurately and their construction and use will contribute to scientific thought and procedure.

These measures of skills are of two classes: (1) scales, (2) standardized tests. The former have samples of products in the skill in question of exactly ascertained varying degrees of difficulty so arranged in relation to each other in the form of a scale that the distance of each from the zero point is known, as well as the relative values of each to all the others. These scales are then used in a way similiar to the scales for measuring length, weight, etc. The performance of the pupil is compared with the scale and its value assigned by the examiner or judge in the terms thereof. Performances for the various grades in the schools are ascertained and standard scores established in terms of the quality indicated by the scale. The Thorndike writing scale and the Hillegas composition scale illustrate this class of educational measures.

The second class is composed of tests having examples or things to be done of equal degree of difficulty or whose relative difficulty is known. Through the giving of these tests to large numbers of children in the various grades, their performances have been ascertained and standard scores established in terms of number of examples or things done in the standard time and under the standard conditions for giving the test. The *Courtis Standard Research Tests in Arithmetic* are the most prominent of this class. Several forms of this series contain equivalent tests that may be used interchangeably.

When these amounts are stated in terms of units on a scale, we have one desirable characteristic, which is wanting in the standardized tests—namely, the relative worth of the scores, because all of the points in the scale are evaluated from a determined zero point the same as with the foot rule. Thus, writing or quality 8 is twice as good as quality 4, but only half

as good as quality 16. One other point regarding these scales should be mentioned before passing to the next division of our subject. The location of the position of the various samples of educational performance on the scale have been determined in any of three ways—by the collective judgment as to relative merit of experts, as in the case of the Thorndike writing scale and the Hillegas composition scale, by the actual performances of judges in performing the function involved as in the Ayres writing scale, and by the performance of pupils as in the Woody arithmetic scales, the Buckingham spelling scale and the Ayres spelling scale. The method by which the choosing of samples or examples equally distant from each and the determination of the distance of the zero points below the lowest of these points can not be entered upon here. The procedures are difficult and involved and have been accomplished with varying degrees of accuracy in the various scales.

Turning now to the practical uses that are and may be made of these scales and standardized tests, the whole may be summed up in the statement that they may be used in thinking upon any phase of the procedure of the school in which the activities tested by the scales or tests are present as an element. They may be given by the superintendent, supervisor, principal or teacher and the results utilized by them and also by the pupils, on the one hand, or by the school board, the editor, the minister, the social worker, or any one who wishes to pass the most intelligent and exact judgment regarding the schools. They may be used to assist in reaching conclusions regarding standards of work to be attained by the pupils both as to quality and as to speed, as to the length of time in weeks and per day that should be utilized, as to the methods of teaching, as to conditions limiting the teaching —such as number in the class and the abilities of the pupils, etc., and as to the abilities of teachers. Their chief purpose, however, is to improve school procedure. While the results obtained may be used to test the efficiency of a teacher, they should not ordinarily be used in this way at first and afterwards only with due caution. Teachers are not alone re-

sponsible for the present standard attainments and methods and conditions under which the schools are operating. And the fields tested by these scales now cover only a small part of the teacher's work.

The first use of these scales and tests to which I shall refer is the measurement of the actual attainments of the pupils of a school or schools. The fundamental operations in arithmetic as measured by the Courtis Standard Tests furnish a convenient example. Somewhat extensive studies have been made with these tests in several states. The results have been brought together in a comparative way by the Bureau of Educational Measurements and Standards of the Kansas State Normal School. The diagram shows the median performance of children in the various grades in the states of Iowa, Kansas, Indiana and Minnesota. The conclusion is patent that the pupils in the public schools of Iowa in which the tests were given have greater ability in the four fundamental operations than those in the schools tested in any other of these four states, both as regards speed and accuracy. It is to be noted, however, that there are as many cities in each of these states having better records in each grade as there are cities which have poorer records. In fact, there is a wide range in the abilities among these cities.

A comparison of a similar kind between individual cities as to the attainments of their children in arithmetic is furnished in the recent survey of Grand Rapids, Michigan; Cleveland, Ohio, being the city with which comparison is made. The test was similar to the Courtis tests, but of wider scope. It differs also in that simple examples in all of the fundamental operations are followed by groups of greater difficulty, thus forming a spiral test. By a system of weighting a measure of arithmetical ability in all of the fundamental operations, including whole numbers and fractions, was derived. From the diagram it is seen that the two cities are of nearly equal ability throughout, Cleveland being superior in grades three and four, somewhat better in grade five, while Grand Rapids leads slightly in grades six to eight.

In a similar way it is possible to make comparison between cities in all subjects or parts of subjects for which scales or tests have been evolved. Some of them, as reading, may be tested in a number of different ways. From the diagram you will observe that Grand Rapids is slightly superior to Cleveland throughout in oral reading and that both are much better than the average scores of twenty-three Illinois cities in the four lower grades that had been measured by the Gray Reading Tests. The same relationship holds between the two cities in *quality* of *silent* reading, but Grand Rapids is considerably below the average of thirteen other cities in grades four to six and Cleveland in all grades, although the differences diminish in the two upper grades. In *rate of silent* reading, however, Cleveland is superior to Grand Rapids and to the thirteen other cities, the lines for the two latter lying close to each other throughout and crossing each other several times.

These studies are typical of the conditions found throughout our public schools today. The remedy may be special drill, individual attention to pupils or their transfer to the ungraded room or a lower grade; or it may be special assistance to be given the teacher to improve her methods of teaching the subject, of her technique in assisting individual pupils, of her transfer to another grade of work to which she is better adapted. Or possibly there should be modification in the course of study, a rearrangement of the daily program or a redistribution of the time allotment.

On the other hand, superior performances should likewise receive attention. Strong pupils who are up to ideal standards may be relieved from further drill, and in that event, something else must be found for them to do if they are retained in that room; or they may be assigned to classes in a higher grade in the subjects in which they have sufficient ability, if the daily programs are or can be properly adjusted. In certain cases promotion might well result. Superior classes may devote more time to other studies or new subjects may be taken up.

So much for the ascertainment and comparison of the actual

achievements of pupils and the inefficiences they usually reveal. Our next question is how may we use these scales and tests in the reorganization of standard attainments that will produce higher efficiencies. One common practice is to take the average or median scores of a large number of cities as the standard attainment for a particular city. Thus, the schools of Iowa, Kansas, Indiana or Minnesota could observe their state medians in the Courtis arithmetic tests as standards. The "general medians" are those that Courtis has found in his study of scores from many schools situated in various parts of the United States and are the best national standard. These median scores furnish points for reference by means of which one can pass judgment whether the attainments of any school are high or low as compared with other schools. But why fix upon them as standards for a particular school? Why should not the average of the upper half of the cities, or, in other words, the upper quartile, or 75 percentile, be better? Freeman, in his studies of handwriting, furnishes data for such a standard.

Courtis fixed upon the "Courtis" standards from a consideration of various factors, among them school attainments, the abilities possessed by men and women in business and other walks of life, and the natural growth in ability that comes without training during the years between the ages of leaving school and the ages of adults. He then fixes upon 12 as a reasonable score in addition for examples attempted for the eighth grade and finds the actual accomplishment of the schools so near this (11.6) that he thinks it must be a fair standard for the schools. From the eighth grade he works back and establishes a standard for each grade. Accuracy is 100% for all grades on the theory that it is largely a habit and therefore a product of training, while speed is conditioned by maturity, physical and mental condition, and incentive. In grades eight, seven and six the standards for speed in addition are slightly above the median attainments actually found to exist; in the lower grades the actual attainments are above the standards. These standard attainments when

adopted require a modification of school practice of most cities so that proportionately greater emphasis may be placed upon accuracy in these lower grades. A similar situation obtains in the other three fundamental operations. However, in practice Courtis is compelled for the time being to accept the median performances as norms. Similarly, Freeman has fixed upon standards in handwriting for the eighth grade and then for the lower grades, both for speed and quality, which have been found to be high, and so the average attainments are still used in judging the work of schools.

These standards of Freeman and Courtis and the like should be accepted as tentative ideal standards beyond which a school or a child should not go. Actual working standards are influenced by many other factors, among which are the most recent performances of the pupils, the needs of the community, efficiency of the teaching corps and of supervision. may now be set in the precise terms afforded by these scales in so far as they go. Their use removes indefiniteness, uncertainty, guess, and arbitrary judgment as to what is expected. We now have many such standards for each grade from the third to the eighth in terms of the various scales and standard tests as determined mostly by the median scores. Many school systems have tentatively adopted some of these, while others, pursuing a wiser course, have taken into account the other factors referred to above.

These scales and standardized tests provide the same accuracy and definiteness in reaching conclusions regarding the efficiencies of methods of teaching as efficiencies of standard attainments. Courtis tells of a superintendent who used his arithmetic tests to help him and his associates decide whether the superiority claimed for the Austrian method of teaching subtraction which was used in several of his school buildings was real or imaginary, after a movement for its adoption throughout the system had acquired considerable impetus. The tests were given to all the schools and when it was found that those schools using the other methods did just as well

as those in which the Austrian method was used exclusively, the agitation in its favor came to an end.

The original, and the most frequent and important use that Courtis himself makes of his arithmetic test is in the field of method. For example, he found by their use that children learn to perform the fundamental operations better without the tables than with them, that is by actually using addition, subtraction, multiplication and division examples from the beginning.

Time is another important element that always deserves careful consideration and these tests will enable us to speak much more positively about the optimum time required to reach the desired attainments with the methods in use. We know from Freeman's studies in time given to handwriting in various school systems and from Stone's studies in time given to arithmetic that there is practically no connection between time spent and the product. But the varying conditions in these cities preclude any positive statement. Further study in which the element may be controlled are now much to be desired. It is altogether likely, however, that more definite standard attainments and improved methods will enable us to devote less time to these fundamental skills and then to devote more time to those studies and activities that furnish knowledge and help to mold character. This is an end for which we all are earnestly hoping. If it can be attained, its significance will be incalculable.

Another important field for investigation is the classification of pupils. The wide variation in the achievement of pupils indicates clearly the need for a reorganization of classes on the basis of abilities in the various subjects, but there is another aspect of the question upon which we need further light just now—namely, the relationship between size of class and the educational product. Studies by Boyer, Harlan and others indicate that if there is any relationship, the larger the class, the better the work done. Courtis results seem to indicate this also. It is possible, at least in these mechanical skills, that the teacher does not count so much as the pupil

and that methods can be devised by which there will be even less need for close oversight of teacher than now. The standard attainments of the class set goals for each pupil, or each individual may be given his own standards. His performances in the tests show him how near he is to them. He can plot his situation. Now, if he be given proper materials and directions, he can, in arithmetic and writing, at least, do much without the teacher's participation. Several systems of devices are now on the market to be used in this way. The very definiteness of a goal has been found to act as a spur to action and the reward of progressing to another field after it is reached is alluring.

But whatever the means chosen to promote efficiencies, it is necessary that the class be tested again and comparison made with previous accomplishments. In fact, this is the best use that can be made of scales and standard tests at this time. Conditions surrounding the giving of these tests in various cities at various times by various persons to various groups of pupils necessarily produce varying results among pupils of the same abilities. But in a single school conditions may easily be kept uniform so that the difference between the class scores made at two different times approach a fair degree of accuracy. The measure of the progress made between two dates as shown by the differences in the scores is thus a much safer figure for comparison than the scores themselves.

We have throughout this lecture recognized by implication the existence of the fact of individual differences among the children and the application of the principle to educational administration. That it is a basic principle in achieving efficiencies in schools' needs now to be emphasized. The individual is the unit primarily in every educational procedure; efficiencies of procedure must eventually be brought to bear upon each pupil. The standards of attainment, methods, time, must, in order to achieve the best results, be adjusted to him so that he can make the most of himself for himself and for society. Undoubtedly our unit in the past has been the class—for attainments, method and time; following the

analogy furnished in the industries the pupil has been regarded as the material of the educational process, and the teacher the worker, whereas, the pupil is really the worker. Through supervised study and the unassigned teacher and special classes we are beginning to place him in his true position. These scales and tests have helped us to realize the individualness of teaching and the desirability of letting the pupil go along more independently in the reaching of his own standards, through the use of his own ingenuity in finding the way to attain them and in that time best suited to the end in view. On the other hand, one of the poorest uses that can be made of these tests is to give them and to make no use of the results improving the practice of the schools. While it is worth something to obtain the somewhat unreliable scores and to compare them with the national forms, the largest part of the good that may be derived is missed if the results are not carefully studied and procedure modified and the class again tested. The expense and time spent upon tests not fully utilized hardly bring their proportionate return. Many progressive superintendents are today making unwise expenditures and failing to promote the cause of scientific measurement in education when they have the opportunity in hand, because they do not know how to fully utilize the benefits that come through their use.

A few examples of the testing of results of changed procedure involving measuring both before and after and a comparison of results will now be offered. In the schools of Detroit it was decided, after testing the pupils, that the accuracy of the pupils' work in the fundamental operations was too low and that the standard attainments should be modified so as to lay greater emphasis upon this phase of arithmetic work. The ideal standard of 100% was made tentatively the working standard. The results of the teachers' insistence upon accuracy during the period of one year were, as is shown in the chart, that while the speed of all grades remained about the same, the accuracy of all improved considerably—in fact, so much that the score of the fourth grade was higher at the

close of the year than the score of the eighth grade at the beginning.

In Bloomington, Indiana, the teachers in arithmetic in the departmental schools, including grades six, seven and eight, desired to increase the scores of their pupils in accuracy. So they modified their time allotment during the last six weeks of the semester to the extent of giving five minutes each day of the period devoted to arithmetic to drill for accuracy, or, as, they call it, "dependability." The results are shown in the chart. An increase in dependability of approximately 13% was accompanied by increases in speed which was even greater proportionately. The study also showed that the variability in the performances of the classes was reduced, and, on the whole, those who most needed the drill profited from it most.

Finally, may I add a word of warning? Scales and tests have become popular and the educational mountebank has already began to seize upon the opportunity offered for his enrichment in fame or money, or both. We have already seen, and we shall see more, spurious tests prepared by naive incompetents and put in the market in attractive style by publishing firms whose editorial departments are not able or do not wish to see the puerility in the efforts of the authors. Unless a superintendent knows the principles involved in the making of educational scales and standardized tests and is able to test them in accordance therewith, he would aid the advancement of his profession by using only those scales and tests recommended by authorities who are able to pass such judgments.

JOHN C. CALHOUN AND THE SECESSION MOVEMENT OF 1850

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It has been truly said that "state rights apart from sectionalism have never been a serious hindrance to the progress of national unity;" on the other hand, "sectionalism is by its very nature incipient disunion," as its ultimate goal is political independence for a group of states.[1] Prior to the Civil War there were numerous instances of the assertion of state rights. Almost every state in the Union at some time declared its own sovereignty, but on other occasions denounced as treasonable similar declarations by other states. Only, however, when the doctrine of state rights has been laid hold of as an effective shibboleth by some particular section of the country, to give an appearance of legality to its opposition to measures of the federal government, has the doctrine threatened the integrity of the Union.

The great and outstanding sectional movement prior to the Civil War, which rallied under the banner of state rights, was due to the divergence of interests and views between the North and the South, caused by the growth of the institution of slavery. Indeed the increasing antagonism between the slave and free labor systems and states had revealed itself from time to time even in the first quarter of the Nation's history. Its sectionalizing tendency was realized by the time of the Missouri Compromise in 1820, and pointed out by several, but especially by Jefferson when he wrote this oft-quoted passage, "This momentous question, like a fire-bell in the night, awakened and filled me with terror. I considered it at once the knell of the Union. . . . A geographical line, coinciding with a marked principle, moral and political, once

[1] Anson D. Morse in *Political Science Quarterly*, I, 158.

conceived and held up to the angry passions of men, will never be obliterated, and every new irritation will make it deeper and deeper."[2]

Although the tariff was the ostensible reason for the nullification movement in South Carolina, Calhoun admitted in a private letter in 1830 that it was but "the occasion, rather than the real cause of the present unhappy state of things. The truth can no longer be disguised that the peculiar domestic institution of the Southern States and the consequent direction which that and her soil and climate have given to her industry, has placed them in regard to taxation and appropriations in opposite relations to the majority of the Union; against the danger of which, if there be no protective power in the reserved rights of the states, they must in the end be forced to rebel or submit to having their permanent interests sacrificed."[3]

President Jackson also recognized slavery as the real issue. Following the settlement of the nullification controversy he wrote to a friend that "the tariff was only the pretext, and disunion and a southern confederacy the real object. The next pretext will be the negro or slavery question."[4]

A striking and interesting example of the effect of environment and the sectionalizing movement on the thought and policy of a statesman is revealed in the public career of John C. Calhoun, whose name is more closely identified with state rights doctrines than that of any other public man prior to the Civil War.

In his early life he was conspicuous for his strong nationalism and his advocacy of a liberal construction of the constitution. John Quincy Adams' contemporary estimate of Calhoun as recorded in his diary at this period is especially noteworthy. He writes, "He is above all sectional and factional prejudices more than any other statesman of this Union with whom I ever acted."[5] The causes which led to his change of views have been variously ascribed and doubtless always will

[2] *Writings*, X, 157.
[3] Calhoun to Maxey, Sept. 11, 1830. Quoted in Bassett, *Jackson*, II, 547.
[4] Letter of May 1, 1833 to Rev. Andrew J. Crawford, given in *Congressional Globe*, 36 *Cong.* 2 *Sess.*, I, 32.
[5] *Memoirs*, V, 361.

be subject to discussion. It has been claimed by some of his contemporaries, as well as by some writers of more recent times, that he was led to give up his former views to identify himself with the nullificationists who had become the dominant political party in South Carolina in the late twenties, out of consideration for his future political career and by his burning ambition to become President. While it must be admitted that Calhoun would not have been human if considerations for his political future had not had their weight, and that there is abundant evidence that like his contemporaries Clay and Webster, he had a laudable ambition for the Presidency, nevertheless we are loathe to accept the view that such crass and selfish motives could have been the dominating ones in the mind of so great and commanding a character. Rather are we inclined to the opinion already suggested that as a true son of the South, he was affected by his environment. He became convinced that the economic life of the South was destined to grow increasingly divergent from the North, and that the interests identified with and resulting from the institution of slavery would lead to its permanently being in the minority in the general government of the country. He, therefore, was lead seriously to consider the means by which the peculiar interests of his section could be safe-guarded, while at the same time the Union, which he loved, could be preserved. Hence he laid hold with eagerness upon the doctrine of nullification as the device by which the rights and interests of the minority were to be preserved in the Union. The theory was an attempt to devise a theoretical reconciliation between the most complete state sovereignty and the existence of a general government. Shortly after drafting the South Carolina Exposition of 1828, he writes to a private correspondent, "To preserve our Union on the fair basis of equality, on which alone it can stand, and to transmit the blessings of liberty to the remotest posterity is the first great object of all my exertions."[6]

[6] Calhoun's *Correspondence*, American Historical Association, *Report*, 1899, II, 269-270.

If this is a correct explanation of Calhoun's reasoning, we can understand why the doctrine of nullification appealed to him; first, because it reconciled his devotion to the Union as well as to his state and section, and secondly, it enabled him honestly to declare, as he did declare, that it was the great conserving feature of our system of government.[7] The right of secession, which, since the establishment of the government under the constitution, had been held from time to time in the North as well as in the South as a theoretical possibility, was reserved by Calhoun's *Exposition* as a last resort.

The acceptance of the view just advanced of Calhoun's motives will go far in explaining his subsequent course. Although he championed Southern interests, he restrained the radicals of his state and section for nearly two decades longer, until at last he became convinced that the interests of the two sections were so irreconcilable that the Union ought not to be preserved except at the price of specific constitutional concessions."[8] Apparently the year 1847 marks the date when Calhoun, alarmed by the aggressiveness of the northern advocates of the Wilmot Proviso, deemed it high time to arouse the South "to calculate the value of the Union." In a private letter, dated March 19, 1847, he writes, "The time has come when it (the slavery question) must be brought to a final decision."[9]

The part that Calhoun played in the sectional agitation during the next three years, the last of his life, and especially his part in launching and promoting the project for a southern convention, as also the history of the movement for such a convention of the Southern States, which was to demand protection for the rights of that section in the Union, or to concert measures for secession from the Union, is the theme of the remainder of this lecture. The idea of a southern con-

[7] Calhoun, *Works*, VI, 50, 123.
[8] Beverley Tucker's letter, March 25, 1850. *William and Mary Quarterly*, XVIII, 45. See *Post*, 126.
[9] *Correspondence*, 720. See also letter to a member of the Alabama Legislature, Benton, *Thirty Years View*, II, 698.

vention, however was not new.[10] It had been proposed as early as 1844, both at the time of the Texas agitation and in connection with the tariff controversy of that year. The project at that time found considerable support in South Carolina both in the press and with the public, as fiery and radical speeches, resolutions and toasts threatening disunion testify. The Hon. R. Barnwell Rhett, Calhoun's colleague in the United States Senate, especially championed the measure. The movement, however, met with general opposition in the other Southern States and Calhoun and his friends opposed it, favoring a more astute policy and awaiting the results of the presidential election. The resulting election of Polk led to the abandonment of the project, even by its former advocates.

The demand of the North that slavery should be excluded from all the new territory that it was expected would be acquired as a result of the Mexican War revived the sectional issue. Calhoun now takes the lead. Following the adoption of the Wilmot Proviso by the House of Representatives for the second time, on February 15, 1847, he delivered a speech in the Senate in which he denounced the Proviso and summoned the South to repudiate compromise and stand upon her rights. At the same time he presented a set of resolutions containing a new doctrine that Congress can impose no restriction upon slavery in the territories.[11] They became known as "the Platform of the South." Although these resolutions were not pressed to a vote, the principles underlying them were generally adopted by the Southern Democrats, and soon found expression in the resolutions of several of the Southern State legislatures, notably by Virginia, which was the first to adopt them.[12] Apparently Calhoun was fully convinced that it was high time that something should be done to unite the South in order to preserve her interests in the Union. In a

[10] Louisiana, Feb. 20, 1837, had proposed one "to determine the best possible means to obtain peaceably if they can, forcibly if they must, that respect for their institutions to which they are entitled by the enactments of the Federal compact," etc. *Acts of Louisiana*, 1837, 18, 19.
[11] Calhoun, *Works*, IV, 339-349.
[12] March 8, 1847, *Acts of Virginia*, 1846-47, 236.

private letter of this period he wrote "that instead of shunning, we ought to court the issue with the North on the slavery question. I would even go one step further, and add that it is our duty to ourselves, to the Union and our political institutions to force the issue on the North."[13]

Partially abandoning his previous policy of restraining the radicals in South Carolina, he threw himself into the movement to arouse the people. On his return from Washington early in March he was greeted with great enthusiasm by the Mayor and Council of Charleston and a mass meeting of the citizens. This meeting, after listening to Calhoun's plea for the union of the South on the slavery issue, regardless of party ties, adopted a strong report and resolutions similar to those that he had presented in Congress.[14]

Some both in and out of the state suspected that Calhoun was playing politics. President Polk in particular held this view. Following the former's efforts to secure the signatures of prominent southerners to an address to the people of the United States on the subject of slavery and the making of this question a test in the next presidential election, Polk records his condemnation in his *Diary* under date of April 6, 1847:

"Mr. Calhoun has become perfectly desperate in his aspiration to the Presidency, and has seized upon this sectional question as the only means of sustaining himself in his present fallen condition, and that such an agitation of the slavery question was not only unpatriotic and mischievous, but wicked. I now entertain a worse opinion of Mr. Calhoun than I have ever done before. He is wholly selfish, and I am satisfied has no patriotism. A few years ago he was the author of nullification and threatened to dissolve the Union on account of the tariff. During my administration the reduction of duties which he desired has been obtained, and he can no longer complain. No sooner is this done than he selects slavery upon which to agitate the country, and blindly mounts the topic as a hobby."[15]

[13] Benton, *Thirty Years View*, II, 698.
[14] Calhoun's Speech, March 9, 1847, *Works*, IV, 382-396. *Niles' Register*, LXII, 73-75; Calhoun, *Correspondence*, 718-720; McMaster, VII, 486-489, 494-495.
[15] *Diary*, II, 458-9.
James H. Hammond writes to W. G. Simms, March 21, 1847, that he has just read Calhoun's Charleston speech. His object is to gain Southern vote for himself for President. Every one in South Carolina will see this. It will be said that he agitates the slavery question for selfish purposes—"South Carolina under present auspices can do nothing if she puts herself foremost but divide

Calhoun's suggestion was not sufficiently encouraged, so the proposed address was not issued at this time. The presidential campaign of 1848 led to a postponement of the issue. Calhoun endeavored to maintain a neutral position during the contest. His correspondence for the year 1848, however, shows that he was carefully considering the utility of a southern convention. In a speech delivered in Charleston, August 20, he intimated more clearly than in any previous public utterance that the question of southern union and secession might soon be a vital one.[16] The press and public meetings throughout the state favored resistance and some urged that South Carolina should take the lead in calling a southern convention. As will appear later, Calhoun, while sympathizing with the movement, believed for reasons of expediency it should be initiated in one of the other states, and so he exercised to some extent a restraining influence. On the assembling of the Legislature in November of 1848, Governor Johnson in his message, while stating that the present time, owing to the election of Taylor, a southern man, as President, was not propitious for action, declared that "unity of time and concert of action are indispensable to success, and a southern convention is the most direct and practical means of obtaining it."[17] The Legislature on December 15, after a visit of Calhoun to Columbia, on his way to Washington,[18] unanimously adopted resolutions which were apparently in harmony with his wishes. These declared "that the time for discussion had passed, and that this General Assembly is prepared to co-operate with her sister states in resisting the application of the principles of the Wilmot Proviso to such territory at any and all hazard."[19]

the South and insure disastrous defeat." *Hammond Manuscript*, Vol. 13, Library of Congress. For this and other references to the Hammond collection, I am indebted to Mr. Philip M. Hamer, a member of the Graduate School, University of Pennsylvania.

[16] Speech in Charleston, *New York Semi-weekly Tribune*, Aug. 28th, 1848.

Toombs writes Crittenden, Sept. 27, 1847, "Calhoun stands off too, in order to make a Southern party 'all his own' on slavery in the new Territories." Correspondence of Toombs, Stephens and Cobb, *American Historical Association Report*, 1911, II, 129.

[17] Nov. 27, 1848, *Journal of Senate of S. Carolina*, 1848, 26; *Niles' Register*, LXXIV, 368; Calhoun, *Correspondence*, 1184.

[18] *South Carolina Senate Journal*, 1848, 61.

[19] *Report and Resolutions of South Carolina*, 1848, 147.

On the re-opening of Congress after the election of 1848, Calhoun renewed his effort to secure the issuing of a Southern Address. This time with more success, as the situation in Washington favored his project inasmuch as the slavery question had re-appeared in Congress in several different measures. The sectionalizing effect of the renewed agitation soon revealed itself. As a result of this, and of Calhoun's labors, a gathering of sixty-nine southern members of Congress, drawn from both parties, assembled on the evening of December 23, 1848, to determine upon a common policy for the South. Calhoun and the radical Democrats directed the movement. It was commonly believed in Washington, wrote Horace Mann, "that Mr. Calhoun was resolved on a dissolution of the Union."[20] The attempt was made to unite the representatives of both parties, but it failed of success. President Polk threw the weight of his influence against it. It soon appeared that the Whigs had only entered the conference in order to try to control or defeat the movement.[21] *An Address of the Southern Delegates in Congress to their Constituents* was drafted by Calhoun in which he arraigned the North for their infraction of the Constitution in regard to fugitive slaves and their general course relative to slavery. It denied that Congress had any jurisdiction over slavery in the territories, and it called upon the South to unite, to subordinate party ties, and to prepare to protect itself. "If you become united," it read, "and prove yourself in earnest, the North will be brought to pause, and to a calculation of consequences; and that may lead to a change of measures and to the adoption of a course of policy that may quietly and peaceably terminate this long conflict between the two sections. If it should not, nothing would remain for you but to stand up immovably in defense of rights involving your all, your property, prosperity, equality, liberty and safety."[22]

But the Whigs were not prepared to abandon their party

[20] *Life and Works of Horace Mann*, 273.
[21] See Letters of Toombs to John J. Crittenden, *American Hist. Assoc. Reports*, 1911, II, 139, 141.
[22] Calhoun, *Works*, VI, 290-313; Niles, LXXV, 84-88.

affiliations. As Toombs wrote Crittenden, "We had a regular flare-up in the last meeting, and at the call of Calhoun I told them briefly what we were at. I told him (Calhoun) that the union of the South was neither possible nor desirable until we were ready to dissolve the union. That we certainly did not intend to advise the people now to look anywhere else than to their own government for the prevention of apprehended evils."[23] Alexander H. Stephens tried to prevent action by the caucus, but failed in this. An attempt to substitute an address drawn by Senator Berrien, directed to the "People of the whole Country," and appealing to the patriotism and fairness of the North, failed by a small margin,[24] and the Calhoun address, slightly modified, was adopted and issued on January 22, 1849, but only two Whigs were numbered among its forty-eight signers. Only about one-third of the southern representatives signed.

Owing to the attitude of the Whigs, the effect of the address was greatly weakened. In fact, Toombs declared, "We have completely foiled Calhoun in his miserable attempt to form a southern party."[25] Calhoun, however, in a letter to his daughter two days after the address was issued, expressed satisfaction. He writes "my address was adopted by a decided majority. It is a decided triumph under the circumstances. The administration threw all its weight against us, and added it to the most rabid of the Whigs. The South is more aroused than I ever saw it on the subject."[26]

Polk's *Diary* bears out Calhoun's statement of the administration's hostility to their movement. The President records an interview with Calhoun on January 16, 1849, and notes, "He (Calhoun) proposed no plan of adjusting the difficulty (territorial), but insisted that the aggression of the North upon the South should be resisted and that the time had come for action. I became perfectly satisfied that he did not desire that Congress should settle the question at the present session

[23] Coleman, *Life of John J. Crittenden*, I, 335-336.
[24] *Niles*, LXXV, 101-104.
[25] Coleman, *Crittenden*, I, 335.
[26] *Correspondence*, 762.

and that he desired to influence the North upon the subject, whether from personal or patriotic views it is not difficult to determine. I was firm and decided in my conversation with him, intending to let him understand distinctly that I gave no countenance to any movement which tended to violence or the disunion of the states."[27]

Just before the final meeting of the caucus, Polk was so disturbed that he conferred with his Cabinet on the matter and informed them that he "thought it was wholly unjustifiable for southern members of Congress, when a fair prospect was presented of settling the whole question, to withhold their co-operation, and instead of aiding in effecting such an adjustment, to be meeting in a sectional caucus and publishing an address to influence the country." "I added," he records, "that I feared there were a few southern men who had become so excited that they were indifferent to the preservation of the Union." "I stated that I put my face alike against southern agitators and northern fanatics and should do everything in my power to allay excitement by adjusting the question of slavery and preserving the Union."[28] It was agreed that each member of the Cabinet should be active in seeing members of Congress, and urge them to support the bill to admit California at once as a state. Polk promised to use his influence with members, and records in his *Diary*: "This is an unusual step for the Executive to take, but the emergency demands it." "It may be the only means of allaying a fearful sectional excitement and of preserving the Union, and therefore I think upon high public consideration it is justified."[29]

Through the administrative influence, some of the Democrats joined the southern Whigs in refusing to support the address, yet the South Carolina legislature, as previously stated, had declared that it was prepared to co-operate with other Southern States in resisting the extension of the Wilmot Proviso to the new territory. In the course of the next few weeks the Democratic legislatures in Virginia, Florida and

[27] *Diary*, IV, 288.
[28] *Diary*, IV, 299.
[29] *Diary*, IV, 300.

Missouri adopted resolutions of similar tenor, and even the Whig Legislature of North Carolina joined in denouncing the proposed restrictive legislation and suggested the extension of the Missouri Compromise line to the new territory.[30] Virginia took more radical action by providing for a special session of the legislature should Congress pass the obnoxious laws. In several of the other states, although there was no legislative action, there was a renewal of popular agitation. While the sentiment in both Georgia and Alabama was divided on the Southern Address, the Wilmot Proviso was emphatically condemned by both political parties. In Georgia, Governor Town, who had declared himself in favor of resisting the Wilmot Proviso to the limit, was re-elected, and the Democrats gained control of the legislature for the first time in several years. In Alabama the Democrats also made substantial gains. Moreover, Mississippi, as we shall presently see, took up with zeal the proposal for the southern convention.

Calhoun had not ventured in the *Address of the Southern Delegates* to explicitly propose a southern convention, but we know that he had entertained the possibility of one for some time. More than a year previously he had stated in a confidential letter that such a convention was "indispensable."[31] Within a few weeks after the southern caucus his personal correspondence to political friends in several states shows that he was actively, although quietly, urging the idea of a southern convention and outlining the plan of action. Thus we find him writing to John H. Means, shortly afterward chosen Governor of South Carolina:

"I am of the impression that the time is near at hand when the South will have to choose between disunion and submission. I think so, because I see little prospect of arresting the aggression of the North. If any thing can do it, it would be for the South to present with an unbroken front to the North the alternative of dissolving the partnership or of ceasing on their part to violate our rights. . . . But it will be impossible to present such a front, except by means of a

[30] *Senate Misc. 30 Congress, 2 session*, I, Nos. 48, 51; II, Nos. 54, 58; *Senate Misc. 31 Congress, 1 session*, I, No. 24.
[31] Benton, *Thirty Years View*, II, 698-700. See also letter of Wilson Lumkin to Calhoun, Nov. 18, 1847. *Correspondence*, 1135-1139.

Convention of Southern States. That, and that only, could speak for the whole, and present authoritatively to the North the alternative, which to choose. If such a presentation should fail to save the Union, by arresting the aggression of the North and causing our rights and the stipulation of the Constitution in our favor to be respected, it would afford proof conclusive that it could not be saved, and that nothing was left us, but to save ourselves. Having done all we could to save the Union, we would then stand justified before God and man to dissolve a partnership which had proved inconsistent with our safety, and, of course, destructive of the object which mainly induced us to enter into it. Viewed in this light, a Convention of the South is an indispensable means to discharge a great duty we owe to our partners in the Union; that is, to warn them in the most solemn manner that if they do not desist from aggressions and cease to disregard our rights and stipulations of the Constitution, the duty we owe to ourselves and our posterity would compel us to dissolve forever the partnership with them. But should its warning voice fail to save the Union, it would in that case prove the most efficient of all means for saving ourselves."[32]

Scarcely more than a month after this letter was written, in accordance with a plan privately suggested by Calhoun, and publicly favored by district and parish meetings in various parts of South Carolina, a convention of delegates assembled at Columbia, May 14-15, 1849. After approving the *Southern Address* and the action of the state government, it called for a special session of the Legislature to take action in case any of the proposed obnoxious legislation should be passed by Congress. This convention also appointed five prominent men as a Central Committee of Vigilance and Safety to correspond with the other states to promote concert of action, and to perfect the organization of the state—thus fully accepting Calhoun program.[33]

It was desired, however, that some state other than South Carolina should take the lead. Mississippi was the first to respond under the stimulus of Mr. Calhoun's letters.[34] In May, 1849, an informal meeting of prominent citizens was

[32] Calhoun to John H. Means, *Correspondence*, 765, 766.
[33] *National Era*, May 24, 1849.
National Intelligencer, May 24 and 26, 1849.
[34] D. T. Herndon in *Alabama Hist. Society Transactions*, V. 204-208, Cleo Hearon in *Publications of Miss. Hist. Society*, XIV, chs. II and III.

held at Jackson to protest against southern exclusion from the territories. This gathering issued a call for the voters of the several counties to choose delegates to a state convention to be held at Jackson in October "to consider the threatening relations between the North and the South." A copy of their resolutions was sent to Mr. Calhoun with the request that he advise the promoters of the movement the proper course for the convention to take. Calhoun replied in a letter addressed to Colonel C. S. Tarpley, dated July 9, 1849, outlining the cause that it was desirable to take. His letter was in part as follows:[35]

"In my opinion there is but one thing that holds out the promise of saving both ourselves and the Union: and that is a Southern Convention; and that, if much longer delayed, cannot. It ought to have been held this fall, and ought not to be delayed beyond another year; all our movements ought to look to that result. For that purpose every Southern State ought to be organized, with a Central Committee and one in each county. Ours is already. It is indispensable to produce concert and prompt action. In the meantime, firm and resolute resolutions ought to be adopted by yours and such meetings as may take place before the assembling of the Legislature in the fall. They, when they meet, ought to take up the subject in the most solemn and impressive manner.

"The great object of a Southern Convention should be, to put forth in a solemn manner the causes of our grievances in an address to the other states, and to admonish them, in a solemn manner, as the consequences which must follow, if they should not be redressed, and to take measures preparatory to it, in case they should not be. The call should be addressed to all those who are desirous to save the Union and our institutions, and who, in the alternative, should it be forced on us, of submission or dissolving the *partnership*, would prefer the latter. No state could better take the lead in this great conservative movement than yours."

Calhoun wrote a similar letter to Senator Henry S. Foote, August 2, 1849,[36] to which Foote replied a few days before the Mississippi convention met, stating:

[35] *"The Southron,"* Jackson, Miss., published Mr. Calhoun's letter May 24, 1850. Copied in *National Daily Intelligencer,* June 4, 1850, also *Cong. Globe, 32 Cong. 1 sess.* Appendix, 52.
[36] *National Era,* June 12, 1851.

"I am gratified to have it within my power to inform you that several leading gentlemen of both the two great political parties in Mississippi have promised me at our approaching convention to act upon your suggestion relative to the recommendation of a Southern Convention."[37]

His suggestions were explicitly followed. The state formally took the lead, a Central Committee was organized and local committees were appointed in the counties, "firm and determined resolutions" were adopted by the October convention. These condemned the policy of Congress, and appointed a committee of seven, which issued "An Address to the Southern States," inviting them to send delegates to a convention to be held at Nashville, June 3, 1850, "with the view and the hope of arresting the course of aggression, and, if not practicable, then to concentrate the South in will and understanding, and action," "and as the possible ultimate resort the call by the legislature of the assailed States of still more solemn conventions, to deliberate, speak and act with all the sovereign power of the people. Should, in the result, such conventions be called and held, they may look to a like regularly constituted convention of all the assailed States to provide in the last resort for their separate welfare, by the formation of a compact and a union that will afford protection to their liberties and their rights."[38]

Calhoun's connection with the movement was not generally known, but was suspected.[39] Following his speech in Congress,

[37] Letter of Sept. 25, 1849; Calhoun *Correspondence*, 1204. See also letter from A. Hutchinson to Calhoun of Oct. 5, 1849, *Ibid*, 1206.

[38] For address and resolutions, *Congressional Globe*, 31 *Cong.* 1 *Sess.*, I, 578-579, 942.

[39] Senator Foote in a speech Feb. 8, 1850, denied that the Mississippi movement was instigated by South Carolina. *Congressional Globe*, 31 *Cong.* 1 *sess.* Appendix, 100. In Dec., 1851, however, he acknowledged "that it was through me, in the first instance that Mr. Calhoun succeeded in instigating the incipient movement in Mississippi, which led to the calling of the Nashville Convention." *Ibid*, 32 *Cong.* 1 *sess.* Appendix, 52. A few days later he stated that he had not known of Mr. Calhoun's letter to Mr. Tarpley and to others until recently, and added "the letters that I have seen, according generally with this one (Tarpley) satisfied my mind that the *modus operandi* of the Convention was more or less marked out by his great intellect." *Cong. Globe*, 32 *Cong.* 1 *sess.*, 134-135.

Daniel Wallace was sent by Gov. Seabrook of South Carolina as a special agent to attend the Mississippi Convention. In a confidential letter he reports that he noted there the influence of "our own old statesman." (Calhoun). See "Report of D. Wallace, Special Agent from South Carolina to Mississippi," in collection of letters of W. B. Seabrook in the Library of Congress. For this reference I am indebted to Mr. Philip M. Hamer.

For Wallace's denial that he was an agent of South Carolina, see references

March 4, 1850, just before his death, it was asserted. Thus the Fayetteville (N. C.) *Observer* declared: "The proposition to hold such a convention was first authoritatively made in Mississippi. But we presume nobody is so green as to imagine that it originated there. No, we have no shadow of doubt that the action of Mississippi was prompted from South Carolina, and now in Mr. Calhoun's speech we have a revelation of the purpose for which the convention is to assemble. It is to demand impracticable and impossible concessions, with no hope of their being granted, and with a purpose and declaration that if not granted the South will secede from the Union." His letter to Colonel Tarpley was not made public until after his death, shortly before the assembling of the Nashville convention.

Calhoun followed the progress of events with great interest and urged his correspondents in Georgia, Alabama and South Carolina to see that their state supported the Mississippi movement.[40] He writes Jas. H. Hammond, "As to myself, I lose no opportunity, when I can act with propriety, to give the great cause an impulse. . . . I have made it a point to throw off no one. Let us be one is my advice to all parties in the South. . . . The time for action has come. If the South is to be saved, now is the time."[41]

His own state government was the first to respond. Governor Seabrook's message to the legislature, when it assembled the last of November (1849) reviewed the slavery agitation. He predicted that "the enactment of any one of the contemplated measures of hostility would probably, if not certainly, result in severing the political ties that now unite us. . . . The South has at last been aroused from its criminal lethargy to a knowledge of the dangers of its position. For the first time in our political history, party affinities are becoming merged in the high obligation of co-operation for the sake of safety, or for participation in a common fate." He

cited by A. C. Cole, The South and the Right of Secession, in *Mississippi Valley Historical Review*, I, 377, note 2.

[40] *Correspondence*, 762, 769, 773, 775, 778. Letters to Calhoun, *Ibid*, 1195, 1196, 1199-1202, 1210-1212.

[41] Letters of Jan. 4, 1850, *Correspondence*, 779.

concluded by recommending the southern convention as proposed by the people of Mississippi. This recommendation was endorsed by the Legislature, meeting as a caucus, December 12, 1849, and the election of delegates was provided for.[42] They also adopted the measure recommended by the May convention.

Calhoun's fondest hope for the union of the men of the South of both political parties seemed about to be realized. Whigs vied with Democrats in declaring that southern rights were in universal danger, and that only a united and bold front would prevent the enactment of measures that would force the disruption of the Union. Southern men and the southern press were even seriously considering the value of the Union and the advantages of its dissolution.

On the assembling of Congress in December of 1849, Alexander H. Stephens, of Georgia, a leading southern Whig, wrote: "I find the feeling among the southern members for a dissolution of the Union—if the anti-slavery measures should be pressed to extremity—is becoming more general than at first. Men are now beginning to talk of it seriously who twelve months ago hardly permitted themselves to think of it.[43] Calhoun a little later wrote: "The southern members are more determined and bold than I ever saw them. Many avow themselves to be disunionists, and a still greater number admit that there is little hope of any remedy short of it."[44]

Similar opinions were expressed in many southern papers. *The Richmond Enquirer* of February 12 declared "The two great political parties of the country have ceased to exist in the Southern States, so far as the present slavery issue is concerned. United they will prepare, consult, combine, for prompt and decisive action. With united voices—we are compelled to make a few exceptions—they proclaim, in the language of the Virginia resolution, passed a day since, the preservation of the Union if we can, the preservation of our

[42] *The Tri-weekly South Carolinian*, Dec. 8, 1849.
[43] Johnson and Brown, *Life of Alexander H. Stephens*, 239.
[44] Jan. 12, 1850, Calhoun, *Correspondence*, 780, also Dec. 8, 31, 1849, *Ibid*, 776, 778.

own rights if we cannot. This is the temper of the South; this is the temper becoming the inheritors of rights acquired for freemen by the hand of freemen. 'Thus far shalt thou come, and no farther,' or else the proud waves of Northern aggression shall float the wreck of the constitution."[45]

A communication in the Columbia (S. C.) *Telegraph,* February 15, 1850, reads: "My idea is, first, to perfect the union of the South, now so happily in progress. A year ago I thought the South was doomed, it seemed so dead to the true situation, mouthing after the lessons of miserable demagogues the sounding devices of party. But that day is past. There are no more Whigs, no more Democrats—there is but one party, 'the Party of the South.' The South is aroused, her banner is on the outer wall, and the cry is still 'they come, they come,' 'let the good work go on.' Second, to dissolve the Union immediately, form a Southern Confederacy, and the possession by force of most of all the territories suitable for slavery, which would include all south of the northern latitude of Missouri."[46]

Even *The Richmond Republican,* a conservative Whig paper, said editorially: "We are afraid these men will find the South is in earnest when it is too late. . . . It is melancholy to contemplate such a state of things; for whatever northern citizens may believe, or affect to believe, every Southern man knows that to persist in those measures which form the principal point of northern policy upon the subject of slavery will result in a dissolution of the Union."[47]

Robert Toombs, a Whig representative from Georgia, wrote: "When I came to Washington I found the whole Whig party expecting to pass the Proviso, and Taylor would not veto it. . . . I saw General Taylor, and talked fully with him, and while he stated he had given and would give no pledges either way about the Proviso, he gave me clearly to understand that if it was passed he would sign it. My course instantly became fixed. I would not hesitate to oppose the Proviso, even

[45] Quoted in *National Intelligencer,* Feb. 16, 1850.
[46] Quoted in *National Intelligencer,* Feb. 21, 1850
[47] Quoted in *National Intelligencer,* Feb. 2, 1850.

to the extent of a dissolution of the Union."[48] He, therefore, believed that the Whigs should join with the southern Democrats in presenting a determined resistance to this obnoxious measure.

Stephens' letters from December to early in February show a similar determination as well as despair of the preservation of the Union. Thus he writes his brother on January 21: "I see no hope to the South from the Union. I do not believe much in resolutions, anyway. I am a good deal like Troup in this particular. If I were now in the Legislature, I should introduce bills reorganizing the militia, for the establishment of a military school, the encouragement of the formation of volunteer companies, the creation of arsenals, of an armory, and an establishment for making gunpowder. In these lies our defense. I tell you the argument is exhausted, and if the South does not intend to be overrun with anti-slavery doctrines, they must, before no distant day, stand by their arms. My mind is made up; I am for the fight, if the country will back me. And if not, we had better have no 'resolutions' and no gasconade. They will but add to our degradation."[49] The *National Intelligencer,* a Whig paper published in Washington, in the leading editorial February 2, entitled "The Evil of the Day," confirmed this view of the attitude of the southern Whigs. "What is most alarming of all," it declared, "is the fact that gentlemen who have ever heretofore been most conservative and even thoroughly Whig are to be found still more excited than those who have been habitually railers against the North, and undervaluers of the Union."

In the meantime the movement for the Nashville Convention was taken up in the other southern legislatures as they assembled. The legislatures of Virginia, Georgia, Florida, Alabama, Mississippi, Texas and Arkansas voted respectively that their state should be represented, but not without opposition in some states, and considerable difference of opinion in regard to the methods to be employed for the choice of dele-

[48] Coleman, *Life of John J. Crittenden,* 365, letter dated April 25, 1850.
[49] Johnson and Brown, *Stephens,* 245. See also letter of Feb. 13, 1850, to Jas. Thomas, *American Hist. Assoc. Report,* 1911, II, 184.

gates. In general, the Whigs desired election by the people, the Democrats by the legislature. As a result there were a variety of methods adopted.

In some states all the delegates were chosen by the legislature, in others a part were so chosen to represent the state at large, and the remainder by the district system. In a few states, where the choice was left to the people, it resulted in only a partial representation, as was true of Virginia, Texas and Arkansas. The legislature of Tennessee, Louisiana and several of the border states refused to indorse the convention, and from only one of these, Tennessee, were any representatives present at Nashville.[50] Four of the state legislatures, namely, Georgia, Alabama, Mississippi and Virginia, also authorized the calling of a state convention in case the Wilmot Proviso or similar obnoxious measures were adopted by Congress. Mississippi added an appropriation of $220,000 as a contingency fund.

From the moment of the introduction of Clay's resolutions, the southern Whig sentiment began to change, and it was soon evident that the majority of their numbers were ready to accept the admission of California, if the Wilmot Proviso was not applied to the rest of the Mexican cession. It was otherwise with the southern Democrats. On the 4th of March Calhoun's speech, the last great effort of his life, was presented to the Senate.[51] The scene was a dramatic one. The knowledge that the veteran statesman and great champion of southern rights was to emerge from his sick room to present his views on the crisis of the hour was sufficient to crowd the Senate chamber. Too ill to deliver the speech himself, it was read by Senator Mason, of Virginia. Calhoun, pale and emanciated, sat with eyes partially closed, listening to the delivery of his last appeal and solemn warning. "A sombre hue pervaded the whole speech," wrote Senator Cass. It was, indeed, clear that the author, conscious of his approach-

[50] Cole, *The Whig Party in the South*, 158-162, 170-171. D. T. Herndon, *The Nashville Convention of 1850*, in *Transactions of the Alabama Historical Society*, V, 213-216.

[51] *Congressional Globe*, 31 *Cong.* 1 *Sess.*, I, 451-455; *Works*, IV, 542-573.

ing end, was oppressed with anxious forebodings of the disruption of the Union. He declared that the compromise proposed could not save the Union. This could be done only by the North giving to the South equal rights in the territories, by ceasing to agitate the slavery question and by consenting to an amendment to the Constitution which would restore to the South the power to protect herself. The amendment as explained in a posthumous essay provided for the election of two Presidents, one from each section, each to have a veto on all legislation.[52]

This extreme demand did not command the support of the southern Whigs, and Webster's "Seventh of March Speech" did much to reassure them,[53] and the southern press in general applauded it; while many condemned Calhoun's remedy as impracticable. Thus the *Virginia Free Press* declares: "The necessity of the Convention, if it ever existed, is now at an end. . . . Since the delivery of Mr. Webster's speech the great body of the people feel a confidence that the agitating and exciting question of the day will be amicably settled and the clouds which lately lowered so darkly over the Union will be dispelled."[54] Even the radical *Charleston Mercury* says: "With such a spirit as Mr. Webster has shown, it no longer seems impossible to bring this sectional contest to a close, and we feel now, for the first time since Congress met, a hope that it may be adjusted."[55] The *New Orleans Bee* declared that "the public sentiment of nine-tenths of the people of the South will rebuke the opinion of Mr. Calhoun and stamp it as calumny upon the slave holding part of the community."[56] The change in the attitude of the press in regard to the Nashville convention was general, but particularly marked in the case of Whig papers. The *Wilmington Chronicle* states that

[52] *A Discourse on the Constitution and Government of the United States.*

[53] Toombs in a letter of March 22, 1850, to Linton Stephens wrote: "We have a tolerable prospect for a proper settlement of the slavery question. I should think it a strong prospect if it were not that the Calhoun wing of the South seem to desire no settlement and may perhaps go against any adjustment which would likely pass." *American Historical Association Report*, 1911, II, 188.

[54] *National Intelligencer*, March 18 and 23.

[55] *Ibid.*

[56] *National Intelligencer*, March 11.

of sixty papers from ten slave-holding states from Maryland to Louisiana, not more than one-quarter take decided ground for a southern convention. "The rest are either strongly opposed to it, doubt its utility or are silent on the subject."[57]

On the other hand, leading Democrats and several of the influential party papers tried to check the rising tide of union sentiment and to urge the convention forward. A meeting of southern Senators was held in Washington on April 16, at which all except four were present. They unanimously recognized the importance of the convention being held.[58] The Columbus *Sentinel* (Georgia) declared: "Let the Convention be held and let the undivided voice of the South go forth, . . . form the deliberations of that Convention, declaring our determination to resist even to civil war, and we shall then and not till then hope for a respectful recognition of our equality and rights."[59]

In South Carolina many declared openly in favor of secession. Thus the Fairfield *Herald* of May 1 states its views: "The time for the Southern Convention is nigh at hand, and with its approach conflicting opinions harass the mind. The question has been frequently asked, with all seriousness, what will be the probable action of the Convention? We have hoped, and we still desire, that the Convention will assume a decided position and declare to the North that there is a line established beyond which, if they dare trespass, a revolution shall be the consequence. Further than this, we anxiously pray that the Convention may entertain the proposition of the formation of a Southern Confederacy. The Union, as it now exists, has proved a curse and not a blessing. It has been made the means of catering to northern taste and inclinations, robbing from the southern planter his pittance to pander to the craving propensities of northern leeches. In the language of the Wilmington *Aurora* (which we unhesitatingly endorse) we would say to our delegates, who will shortly leave for the

[57] *National Intelligencer*, March 19.
[58] *Montgomery Advertiser*, April 16, 1850.
[59] *National Intelligencer*, March 11.

Convention, if they intend to furnish us with *barren addresses* merely, they had better stay at home."[60]

Such utterances as these led several of the Whig delegates who had been chosen to the convention, especially in Georgia, to decline to attend on the ground that the movement had not the support of the people as shown by the small vote cast, and because they were opposed to anything looking toward disunion.[61] "They saw," said the *Southron,* "that South Carolina and portions of the loco foco party in other States were determined to press the consideration at the Nashville Convention the propriety of the treasonable project of disunion."[62] Some of the Whigs, however, decided to attend to prevent extreme measures. William M. Murphy, one of the delegates at large from Alabama, published an open letter stating his reasons. "It is said that the object of the Convention is to dissolve the Union; if this be true no earthly power should prevent my attendance to prevent that awful calamity."[63]

Chief Justice Sharkey and the Mississippi Whigs, however, attended, and the former both before the Convention met.[64] and in his speech from the President's chair in that body denied that the object of the originators of the movement was to dissolve the Union, but to obtain relief from the "violations of the Constitution which the North had made." "The Convention had not been called to prevent, but to perpetuate union."[65]

As we have seen Calhoun was largely responsible for the assembling of the Southern Convention, and it is apparent that he had hoped to guide its proceedings. Indeed, he had suggested, as late as the middle of Febuary, that "at least two members from each of the delegation should visit Washington on their way to Nashville, in order to consult fully with

[60] *National Intelligencer,* March 10, 1850.
[61] *National Intelligencer,* June, 1850. Especially letter of Ex. Representative Jas. A. Meriweather of Georgia. *Augusta Chronicle,* quoted in *Nat'l. Int.,* May 7, 1850. *Savannah Rep.* quoted in *Phila. Pub. Ledger,* April 2, 1850.
[62] Jackson *Southron,* May 31.
[63] Montgomery *Alabama Journal,* May 22.
[64] Letter of April 4 in *Nat'l Intelligencer,* April 27. Senator Foote in a speech Feb. 14, 1850, stated a similar view. *Cong. Globe,* 31 *Cong.* 1 *Sess.,* I, 369.
[65] *New York Tribune,* June 24, 1850.

the members from the South that are true to her."[66] Had the lived, doubtless, he would have exercised great influence in directing its work.[67] From his correspondence of the last few months of his life, as well as from articles in papers inspired by him, we are able to form an excellent idea of what he hoped the Convention would accomplish. In a letter to the editor of his organ, the *South Carolinian,* Calhoun wrote early in the winter that "the great object of the Convention is to make a solemn statement of the wrongs of the South and to appeal to the North to desist. Further, in case the latter should refuse to alter its course, to devise some means of action."[68] It is probable that he intended the Convention to embody in its demands the indispensable guarantees that he had presented in his last speech in Congress. This was the view taken by Senator Foote, who, the day following the presentation of Calhoun's speech protested in the Senate against the demand for amendments to the Constitution as a *sine qua non* on the part of the South. Calhoun immediately replied disclaiming having said anything about a *sine qua non,* but added, "I will say—and I say it boldly—for I am not afraid to say the truth on any question, that as things now stand, the Southern States can not with safety remain in the Union."[69]

In his last letter, dated March 10th, he wrote: "Nothing short of the terms I propose can settle it finally and permantly.

[66] *Correspondence,* 782.

[67] Hammond wrote him March 5, 1850, "You must be there with your full power," *Correspondence,* 1212.

[68] *South Carolina Tri-weekly,* May 25, 1850.

[69] *Congressional Globe,* 31 *Cong.* 1 *Sess.,* 1, 462-463. In Dec., 1851, Foote states in a speech that "I am now perfectly certain that it was the intention of himself (Calhoun) and a few other closely associated with him to wield, as far as they might find it in their power to do so, all the machinery of the Nashville Convention for the purpose of setting up demands in favor of the Southern States alike unjust and unreasonable in themselves—a compliance with which they could not have confidently expected. I entertain no doubt also, at this time that he contemplated the breaking up of the Confederacy as more than a probable event, and one to which he began to look forward with a good deal of eagerness." *Cong. Globe,* 32 *Cong.* 1 *sess.* Appendix, 51. For Rhetts denial see *Ibid,* 61.

The correspondence of Judge Beverly Tucker of Virginia to Ex-Governor Jas. H. Hammond of South Carolina, both of whom were delegates to the Nashville Convention, during the spring of 1850, shows that there were those who wished to use the Convention to force secession. Tucker desired that demands should be made on the North that should be so extreme that they would not be accepted. See Tucker's letters of Jan. 27, Feb. 8, 1850, in *Jas. H. Hammond Manuscript,* Vol. 17, Library of Congress.

Indeed, it is difficult to see how two peoples so different and hostile can exist together in one common union."[70]

Judge Beverly Tucker, of Virginia, an ardent secessionist, evidently believed that Calhoun had at last made up his mind that secession was inevitable. On March 25, 1850, he wrote his nephew, "That the action of South Carolina will be determined is absolutely sure. She has been held in check by Calhoun for seventeen years. Seeing now no room between him and the grave for any ambitious career, he, for the first time, looks on the subject with a single eye, and his late speech does but give utterance to what has been in his mind and in the mind of every man in that State during this time."[71]

It would seem that Calhoun was now almost convinced that secession was a necessary measure, but apparently hoped to the last for the preservation of the Union on the terms he had proposed. A few days before his death he dictated an incomplete draft of certain resolutions on the territorial question then at issue.[72] These were directed chiefly against the admission of California under the proposed constitution. It characterized the suggested action as more objectionable than the Wilmot Proviso, because "it would effect indirectly and surreptitously what the proviso proposes to effect openly and directly."[73] The series concluded as follows: "Resolved, That the time has arrived when the said Southern States owe it to themselves and the other States comprising the Union, to settle fully and forever all the questions at issue." Calhoun may have intended this draft for use in the Senate, or, more probably, for the Nashville Convention, but they do not seem to have influenced the text of the resolutions adopted by the

[70] *Correspondence*, 784.
[71] *William and Mary Quarterly*, XVIII, 44-46.
Tucker wrote Ex-Governor Hammond May 7, 1850, Calhoun "died nobly, and his last act redeems all the errors of his life—I have heard of those who rejoiced in his death as providential, I hope it may prove so, but not in the way intended by them. They considered him as the moving cause of excitement in South Carolina. You and I know that he restrained it and restrained himself. When he went home in March, 1833, he was prepared to say all that he said in his last speech and much more, had others been prepared to hear it. I know it from his own lips." *Hammond Manuscript*, Vol. 17.
[72] *Correspondence*, 785-787.
[73] A similar view in his letter of Jan. 4, 1850, *Correspondence*, 779-780.

latter body.[74] His death, occurring two months prior to its meeting left the shaping of the course of the convention to other and less skilful hands.

Owing to the developments in Congress, the movement for the Convention lost importance and support in the South, and the assembling of its members on the third of June aroused little interest in the North, as its action had been discounted. Representatives from nine States were present. The body being composed of seventy-five members from eight States, and one hundred from Tennessee. The Convention was organized with the choice of Judge Sharkey as president. He made a pacific speech, but it probably did not express the attitude of the majority of the delegates. A Committee on Resolutions, consisting of two from each State, reported a series of resolutions based on those presented by John A. Campbell, of Alabama, afterward Justice of the Supreme Court of the United States, which were adopted unanimously on a vote by States. These were rather moderate in character. In fact, Colquitt, of Georgia, characterized them as "tame." The resolutions condemned the Wilmot Proviso and other proposed hostile measures, omitting all mention of the admission of California. They demanded the extension of the Missouri compromise line to the Pacific. This was pronounced "as an extreme concession," and soon came to be regarded as the ultimatum of the Convention. They declined "to discuss the methods suitable for resistance to measures not yet adopted, which might invole a dishonor to the South," and voted to re-convene six weeks after the adjournment of Congress, in case it failed to comply with its demands.[75]

[74] Joseph A. Scoville, wrote James H. Hammond, April 18, 1850, as follows: "Mr. Calhoun commenced dictating some resolutions a few days before he died—he did not finish them, whether he intended them for the Senate or for Nashville I never knew." *Hammond Manuscript*, Vol. 17.

[75] *Journal of Proceedings of the Southern Convention*, 3-8; see S. L. Sioussat,—Tennessee, the Compromise of 1850 and the Nashville Convention, in the *Mississippi Valley Historical Review*, II, 330-340, 343-346, for excellent account of the proceedings of the two sessions of the Convention.

T. D. Herndon, The Nashville Convention of 1850, in *Alabama Historical Society, Transactions*, V, 216-233.

Cleo Hearon, Mississippi and The Compromise of 1850, in *Publication of Mississippi Historical Society*, XIV, Chap. VI.

Farrar Newberry, The Nashville Convention and Southern Sentiment of 1850, *South Atlantic Quarterly*, XI, 259-273.

An address to the people of the Southern States, prepared by R. Barnwell Rhett, of South Carolina, was also reported and aroused much discussion. It was far more radical than the resolutions, comprising the "choicest specimens of disunion tenets," as one of the Southern Whig papers remarked.[76] *The Southern* declared that neither Calhoun, Hayne nor McDuffie, "even in the palmiest days of ultra nullification, ever conceived anything to surpass it."[77] The address denounced expressly the compromise measures pending in Congress and expressed the belief that sooner or later disunion must come. An earnest attempt was made by the Whigs and a few conservative Democrats to strike out this section, and, especially, the statement in the address that it would be unconstitutional to admit California. A number of strong speeches were made in oppostion to this portion of the address. Beverly Tucker, Professor of Law in the College of William and Mary, however, made a fiery speech in favor of secession.[78] The address was carried by a unanimous vote by States, but on motion the vote of each member was recorded, and from that it appeared that the Whigs were opposed, while most of the Democrats supported it.[79] After a session of nine days, the first session of the Convention adjourned on June 12th. The North, by this time, refused to take the Convention seriously. A Philadelphia paper declared, "the prospect is that the members have each made good an excellent claim to ridicule for life."[80] The South, however, regarded it quite differently. The Whigs generally repudiated it, agreeing with *The Republican Banner and Nashville Whig,* "that the spirit of the Convention and the propositions discussed savor so strongly of disunion that every friend of the Republic must feel that its perpetuity is threatened."[81] On the other hand, the Democrats and Democratic press praised its work and influence.

[76] *Southron*, June 28.
[77] *Southron*, June 28.
[78] *Remarks of Beverly Tucker, Southern Convention*, 16 pages, N. D. Copy in Virginia State Library.
[79] *Republican Banner and Nashville Whig*, June 12, 13, 14, 15. This paper said July 4, "only some dozen or fifteen Whigs to some eighty Democrats.
[80] *North American*, quoted by *National Intelligencer*, June 20.
[81] June 17.

We are convinced that a careful study of the Southern Convention movement must lead to the conclusion that it was of much greater importance and a more serious menace to the Union than has been generally recognized by many historians. Mr. Rhodes states that "the Nashville Convention deserves mention, more from the hopes and fears it had excited than from its active or enduring effects."[82] While this is true, it is also true, as he points out in another passage, "that had the Wilmot Proviso passed Congress, or had slavery been abolished in the District of Columbia, the Southern Convention would have been a very different affair, from the one that actually assembled at Nashville."[83] This, it is believed, is apparent from the facts that have been presented. The South, it is clear, would have been united, without distinction of party, against any such measures. Their various legislative resolutions against the Wilmot Proviso, for example, were not mere gasconade, but represented a deep-seated spirit of resistance that undoubtedly would have led to bold and concerted measures to disrupt the Union and to the formation of a Southern Confederacy. But this movement, for the time being, was checked by the passage of the Compromise measures.

While it is undoubtedly true that the project for a Southern Convention and the threat of secession was largely a movement of the politicians rather than one emanating from the people, it is equally true that the Compromise of 1850 was the work of politicians, which was soon to be rejected by the people of both sections. Even at the adjournment of Congress it was not certain that the lower South would accept the Compromise. The Nashville Convention, less representative than when it met in June, convened for a second session November 11 to 19, 1850. All the delegates who accepted the Compromise measures were absent. The extremists being in control, after a series of disunion speeches had been delivered, adopted a set of radical resolutions. These formally affirmed

[82] *History of the United States*, I, 174.
[83] *Ibid*, I, 135.

the right of secession, denounced the recent Compromise Acts of Congress, and recommended a general Congress or Convention of the slave-holding States, "with a view and intention of arresting further aggression, and, if possible, of restoring the constitutional rights of the South, and, if not, to provide for their safety and independence."[84] But what was more alarming was the very definite movement for immediate secession in the four States of Georgia, Mississippi, Alabama, and South Carolina, which was, with difficulty, temporarily checked,[85] but not before the agitation had familiarized the people of the South with this remedy for their grievances and strengthened their belief in secession as a constitutional right, thus preparing the way for its adoption a decade later, when the process of the sectionalization of the country had been completed.

[84] Cluskey, *Political Text Book*, (2 Ed.) 596-598.
[85] Arthur C. Cole, The South and the Right of Secession in the Early Fifties, *Mississippi Valley Historical Review*, I, 376-399.
Cleo Hearon, *Mississippi and the Compromise*, Chs. VIII-XII.

INSECTS AND HUMAN MORTALITY IN WAR

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The present war has not only involved many nations of men but also has affected countless species of living things in all parts of the globe. It has diminished the numbers of domestic animals; it has diminished or increased cultivated plants according as human efforts in the rearing of food supplies have been checked or stimulated in diverse localities. Where agriculture has been suspended, what we may term the wild plants have often had the opportunity to take possession of areas from which they had been expelled, while elsewhere they have been driven out to give place to man's crops. When agriculture is interfered with, even merely by lack of labor to cultivate the soil, and the wild plants come back into their own, the latter are accompanied by various kinds of animals which were previously held in check by the operations incident to farming.

But the war has its more direct effect on non-human living things inasmuch as the close herding of men in armies, the wounds which they receive in battle and the dying and dead who lie for hours on battlefields directly favor the great increase of many smaller forms of life. These are both microscopic, such as the ordinary bacilli of typhoid, of tuberculosis, of putrefaction, and the protozoa of malaria, and those perceptible to the naked eye, among which latter the insects constitute a large element.

There is a widespread idea that all nature exists for the direct benefit of the human race. It is implied in the question which continually greets the naturalist: "What is the use," or "What is the good of this or that animal or plant," meaning, in each case, "to man."

This idea, notwithstanding its very general acceptance, rests on no reliable foundation. On the contrary the actual evidence

is to the effect that each and every living thing, be it plant or animal, lives for itself and, unconsciously, for its own species alone. Any effect on, or relation to, the human species to which it may give rise is purely incidental. Its activities are directed, unconsciously or consciously, to obtaining food, escaping from enemies and reproducing its kind. In many species the life of the individual terminates when its eggs are laid or its young are born. A large proportion of living things are indifferent so far as concerns any direct effect they exercise on human life or which man exercises upon them.

Food at Expense of Humanity

In other cases the obtainment of food by certain plants and animals is at the expense of humanity. The correct viewpoint from which all human diseases caused by germs are to be regarded is that such germs, be they plants, as bacteria, or animals, as the malarial organism, are simply feeding upon the human body, just as the man who eats raw oysters is feeding upon the mollusc's body. The bacterium is as fully justified in its human diet as the man is in his bivalve meal, and no beneficent providence intervenes in the former case any more than in the latter to save the devoured from the devourer. As Colonel Roosevelt says in "A Hunter-Naturalist in the Brazilian Wilderness," "In these Forests the multitude of insects that bite, sting, devour, and prey upon other creatures, often with accompaniments of atrocious suffering, pass belief. The very pathetic myth of 'Beneficent nature' could not deceive even the least wise being if he once saw for himself the iron cruelty of life in the tropics. Of course 'Nature'—in common parlance a wholly inaccurate term, by the way, especially when used as if to express a single entity—is entirely ruthless, no less so as regards types that as regards individuals, and entirely indifferent to good or evil, and works out her ends or no ends with utter disregard of pain and woe." Milder, but to the same effect, is the remark of Alfred Russel Wallace in "The Malay Archipelago:" "Trees and fruits, no less than

the varied productions of the animal kingdom, do not appear to be organized with exclusive reference to the use and convenience of man," and where John Ridd says in "Lorna Doone:" "And more than my own clothes to me, aye and as much as my own skin, are the works of nature round about whereof a man is the smallest." Nor should we forget Empedocles on Etna saying

> "Nature, with equal mind,
> Sees all her sons at play;
> Sees man control the wind,
> The wind sweep man away;
> Allows the proudly-riding and the foundering bark."

When we view the living world from this standpoint we see that there are

Many plants (bacteria, moulds, fungi) which live upon other plants or upon animals;

Many animals which feed directly upon plants;

Many animals which feed directly upon other animals;

All animals ultimately dependent upon other living creatures for food.

If an animal feeds upon another animal it is termed carnivorous. If it be larger than its prey it is further called predatory, if it be smaller it is labeled a parasite. The distinction between a predatory animal and a parasitic animal is one of little importance in comparison with the resemblance in diet in these two cases. Whether a mouse is killed by a cat or by bacilli, we should recognize that there is a fundamental similarity in the two modes of death, namely that in both there is the destruction of one living being by another. We must look at man in the same way and appreciate that whether he dies as the Bishop of Bingen is said to have perished, or from the Black Death which ravaged Europe in the fourteenth century, he dies from a purely biological cause in either case and that no more morality enters into the one mode than into the other.

The selection of these two examples is not without sig-

nificance for it is a discovery of the present century that the Black Death, or Bubonic Plague, which is primarily a disease of rats and other rodents, is due to a bacillus of microscopic size, working in, that is feeding upon, the rat and eventually producing its death. This bacillus is often sucked with rats' blood by the flea which dwells on the exterior of the rat's body. The bacillus does not injure the flea, nor is it itself injured by passing through and out of the alimentary canal of the flea. When the rat dies of the bubonic plague its fleas usually forsake it and, gaining access to another rat or to a human being, introduce some of the plague bacilli into the rat or man, by way of the wound created when the flea sucks blood, and the rat or man then frequently develops the disease.

Although rats are frequently mentioned as occurring in great numbers in the trenches in the present war, and although fleas are also numerous, bubonic plague has not yet appeared, on the western front at least, because the bacillus has not gained entrance into rat or flea.

It is well-known to those who have studied the causes of mortality in armies of the past that a far larger number of deaths have been due to diseases contracted in camp and field than to wounds received in battle. This is shown in the following table:

	Deaths in battles and from wounds.	Death from diseases.
Mexican War, 1846-1848.....	2,731	16,054
American Civil War, 1861-65.....	184,594	259,017
Spanish-American War, 1898.....	243	2,565
British Army, Boer South African War, 1899-1902	6,956	13,590*

Diseases of Present War

Diseases which have already attacked the armies, both of the Entente and of the Central Powers, are typhus, recurrent or relapsing fever, typhoid, dysentery, cholera, diarrhoea, malaria, three days' fever and pneumonia, and there is now good

* 72,551 sick were invalided back to England.

reason for thinking that insects play an important part in the transmission of all of these but the last-named. The relation of insects to typhus is especially instructive and deserves a somewhat minute consideration.

"War," says Dr. R. O. Moon in his 1916 Chadwick Lectures on Typhus Fever in Serbia, "has always been the condition par excellence in which typhus has flourished," and cites the following illustrations:

17,000 died from typhus in 1489 at the siege of Granada by Ferdinand of Spain. Russian prisoners after Austerlitz (1805) spread typhus into France. The Prussians suffered severely from it after Jena and Auerstadt (1806).

Typhus was a scourge among the Spanish at the siege of Saragossa, 1808.

Both French and Russians suffered greatly from typhus in Napoleon's invasion of 1812. The 3rd Army Corps on its arrival at Moscow numbered 12,000 instead of 43,000 and was reduced to 20 on reaching Smolensk on the retreat. 25,000 out of 30,000 French prisoners at Wilna died.

In the Crimean War, of 303,000 soldiers who had been on the battlefields, 200,000 (66%) had been in hospital, only a quarter of these on account of wounds. In the first 6 months of 1856, of 120,000 French troops, 12,000 had typhus and 6000 died of it.

In the Russo-Turkish War of 1876-78, 200,000 were attacked by typhus and half of those attacked died; 60% of the surgeons died from it.

Dr. E. K. Tullidge of Philadelphia, who served as Captain Surgeon in the Austrian Army in the early part of the present war, wrote in 1916: "Fleck typhus has probably caused as much distress and loss of life as that recorded upon the battlefield. Of all diseases it is the most contagious and deadly. If death does not ensue, a long and tedious convalescence is experienced. The epidemic spread of a virulent type of typhus fever . . . has been most active throughout Hungary and the Slavic districts of Europe, not only in the present war, but in campaigns of the past, most notably the

first and second Balkan Wars. It is par excellence a disease of armies in the field. A Bulgarian staff officer told me that during these two Balkan Wars they lost more soldiers in a shorter period of time from fleck typhus than from all other diseases combined. During our past wars it has been the scourge of the American nation, killing more in practically every conflict than shot and shell."

Typhus is an acute continued fever lasting from two to three weeks accompanied by great prostration, cerebral disorder and (in man) an eruption of red spots. It is also known as jail, army or spotted fever. In spite of its prevalence and high mortality, ranging from 15 to 75%, the dependence of typhus on insects for its transmission was first shown as recently as 1909. In July of that year, three French investigators, Nicolle, Comte and Conseil, announced that they had been able to transmit typhus from human patients to a chimpanzee by injection of blood from the former into the latter, and in a similar way from the chimpanzee to a Chinese macaque monkey. Such injections, made by the instruments of the investigators, are of course not the way in which typhus normally spreads and the whole trend of contemporary investigation of the modes of the transmission of infectious diseases naturally led these students to consider the possibility of the piercing organs of some insect, commonly associated with typhus patients, playing the part of their injecting instruments. The insects which fell under their suspicion were the bed-bug, the flea and the louse as well as ticks. They were working in northern Africa and noticed that, at the native hospital at Tunis, where the entering typhus patients were washed and reclothed, no cases of typhus contagion occurred inside the hospital although the newcomers were not isolated and although bed-bugs were numerous. Typhus did appear, however, among those employees who received and disinfected the effects of the patients as they were admitted. On the other hand in the Kerkennah Islands, off the east coast of Tunis, where typhus was endemic, bed-bugs were rare. In the Djerid where the disease was prevalent, fleas were absent. Fleas were

present in the galleries of the phosphate mines and attacked indifferently Europeans and natives, yet only the latter developed typhus. On the other hand two observations were made of the appearance of typhus following the bite of a louse after the ordinary period of typhus incubation. With their suspicions thus directed toward lice, they made the following experiments and published their results in September, 1909. They placed human lice on their Chinese macaque No. 1 which had been previously inoculated with blood from the typhus chimpanzee. The lice were subsequently transferred to macaques A and B, both of which later developed fever and A died, although neither A nor B showed an eruption. The blood of A was instrumentally inoculated into 4 other macaques, 3 of which showed eruptions and 2 of them rises in temperature. The blood of B was similarly inoculated into 2 macaques which showed an aborted febrile reaction without eruption. An examination of the blood of two of these macaques showed the same lesions as those of others in which typhus was most distinct.

In February, 1910, the American Doctors Ricketts and Wilder working in Mexico City, injected human typhus blood into four macaque monkeys of a species different from that employed by Nicolle and his associates. One of the 4 died from other causes, the other 3 showed characteristics of human typhus, although "no eruption resembling that of man appeared." Continuing their experiments they found that six monkeys which exhibited a distinct course of fever following their first inoculation with typhus-infected human blood and were seriously sick, showed no febrile response or other signs of illness when, after their recovery, they were given a second inoculation of virulent blood. This second inoculation is the so-called immunity test and indicates, both in man and monkey, whether the individual has previously had typhus or not. Some of the same blood used for the second inoculation of these six monkeys was injected into other monkeys (the "controls") not previously inoculated and these controls did develop fever.

Ricketts and Wilder then allowed body lice (*Pediculus*

vestimenti) to feed on human typhus patients for several successive days and then on a monkey which, ten days after the first sucking of its blood by the lice, showed a slight rise in temperature regarded as typhus because two immunity tests given to that monkey showed no subsequent fever, although three control monkeys inoculated with some of the same virulent blood developed fever after seven, nine and five days respectively.

To determine that typhus is not contagious in the ordinary sense of the word, Ricketts and Wilder protected their experiments by first killing all other lice than their experimental ones on the monkeys by insect powder, petroleum and scrubbing with green soap and by keeping healthy monkeys in the same cage with the infected. These healthy animals did not acquire typhus under these conditions, but they were susceptible to it as was subsequently shown on inoculating them with typhus blood.

They then produced typhus in monkey No. 7 by injection of blood from a human typhus patient, allowed body lice to feed on this monkey in the sixth, seventh and eighth days of its fever, transferred the lice to monkey No. 12 which seven to eight days later developed fever and was sick but recovered. It was given two immunity tests but remained well after each and showed no fever although the controls developed fever.

While some of the lice were feeding on monkey No. 12, a small quantity of their fæces was collected in a sterile test glass. To this material were added the abdominal contents of three of the lice and the whole mass was pounded up in a sterile salt solution and injected under the abdominal skin of monkey No. 13. The skin incisions healed promptly, with no pus formation. The temperature of No. 13 rose on the fifth day thereafter and remained high for five or six days, the animal becoming passive but not seriously sick at any time; two immunity tests showed no febrile reactions, while the controls reacted with severe fever.

While these experiments in Mexico City were proceeding,

Dr. Howard Taylor Ricketts died on May 3, 1910, "probably by the lice contaminated with the germs of the disease," as one of the announcements of his death stated. It is of especial interest to us to recall that he had accepted the professorship of Pathology in the University of Pennsylvania and was to enter upon his duties on the conclusion of his researches on typhus.

Other investigations of Ricketts and Wilder were published in July, 1910, wherein it was shown "to the extent of reasonable probability" that lice hatched from eggs of lice which had fed on typhus blood, but themselves never directly infected from such blood, are nevertheless infectious and can produce typhus in a monkey and presumably man, by introducing the virus when they feed on monkey or man. Experiments similar to those with lice and monkeys by the same workers, but using bed-bugs and fleas instead of lice, gave no evidence for thinking that these latter two insects convey typhus.

Doctors Goldberger and Anderson, of the U. S. Public Health and Marine Hospital Service, followed with other experiments on the transmission by lice of typhus to monkeys. Although the majority of their attempts did not succeed, they concluded (1912) that both the body louse and the head louse may become infected with typhus which is transmissible by subcutaneous injection of the crushed insect and also by its bite.

These results of the French and American experimenters, together with observations made in different countries as to the conditions under which typhus arises, led to a wide-spread conviction that lice are the responsible agents in the diffusion of this disease. Dr. Goldberger wrote in 1914: "In general terms it may be stated that association with a case of typhus fever in the absence of the transmitting insect is no more dangerous than is association with a case of yellow fever in the absence of the yellow fever mosquito. Danger threatens only when the insect appears on the scene." Da Rocha-Lima, of the Institute for Naval and Tropical Hygiene at Hamburg, wrote in the section which he contributed to Prowazek's

Handbook of Pathogenic Protozoa (1914) "All observations speak for the transmission of typhus by lice. We know no valid objection against it." In 1916, after experiments in which typhus was produced in guinea pigs by injecting them with extracts of typhus-infected lice, the same author wrote "The view now certainly prevails in general that without lice no typhus epidemic is possible."

The Russian Professor Tarassevitch, on the strength of his experience in the present war, has stated that typhus infections usually occur only through the agency of lice, and Dr. Marzinovsky, who was on the Caucasian and Armenian fronts, takes the view that cases of infection not caused by lice are very exceptional.

At the German Medical Congress held at Warsaw in May, 1916, Jürgens stated that an individual infected with typhus can infect only lice and not another man and it is probable that the parasite of typhus can complete the cycle commenced in man only in the body of the louse. Lice can become infected only from a case of typhus fever and not in the incubation stage of the disease. Lice which have bitten a convalescent typhus patient will not be infective. All these observations indicate that the parasites in human blood produce, at a definite period, forms, the development of which can be completed only in the louse where they mature into forms capable of re-infecting man. Lice become infective a few days after sucking infected blood and lose their infectivity a few days later. The eggs of an infected louse may be themselves infected. An epidemic never occurs in the absence of lice.

Cause of Typhus Scourge in Serbia

The great outbreak of typhus in Serbia in the first five months of 1915, is held accountable for probably more than 100,000 deaths. Dr. R. O. Moon, already quoted, who went to Serbia early in that year, only returning to England when he had himself contracted typhus, thought indeed that lice were not the only transmitters and favored infection by "direct

inhalation." Dr. B. W. Howell of England, who also was in Serbia at the time of the epidemic, wrote (1916): "There seems to be no doubt that lice are carriers of the disease and perhaps fleas and bugs to a slighter degree. The Serbs themselves believed in an inhalation theory; it was difficult to get them to give definite scientific reasons to substantiate this." Lieut.-Col. S. M. Copeman, in charge of the Hygiene Dept. of the Royal Army Medical College, reviewing the Prevention and Arrest of Certain Epidemic Diseases in War Time (1917), after considering the Serbian epidemic, said: "it is now established that the contagion of typhus is generally, if not invariably, conveyed through the body louse as an intermediary."

It is evident, therefore, from the concurrence of widely separated observers, that something is transferred from typhus patients to lice and from lice to men resulting in typhus in the latter. What this something is is not certain. All analogy points to its being a living thing and da Rocha-Lima (1916) describes and figures portions (cells) of the stomach and salivary glands of lice which have fed on typhus patients as strongly infected with minute bacilli-like corpuscles which can not be considered as part of the normal flora of the alimentary canal of the insect, as they establish themselves in immense numbers in the stomach cells and produce visible changes in them. These corpuscles, or their representatives, must pass into man and, whether in louse or man, must be viewed as parasites thriving on and at the expense—often even to the death—of the latter. That they cause death of the louse in which they dwell has not yet been shown.

We may say then: without lice, no typhus, but lice may be present without typhus. Until the typhus patient or typhus carrier appears on the scene to afford the possibility of lice becoming infected, these disgusting insects cannot introduce typhus into man and, conversely, the typhus patient is harmless to his fellows as long as no lice obtain access to his person.

It is evident therefore that it is absolutely necessary to destroy lice which have had any contact with typhus patients.

How difficult this is is shown by Dr. Tullidge's account of his precautions as Captain Surgeon in Hungary. At Miskolcz, where he was in charge of a reserve hospital, every new arrival was stripped, clothes and accoutrements put in a bag for sterilization by dry heat, tobacco, trinkets, suspenders and worn socks were destroyed; the men were washed first with soap and warm water, being well scrubbed by an orderly from head to foot; then shaved, not one hair being allowed to remain on the body; then sponged all over with gasoline in another room, then a third bath (presumably water), then given clean linen and taken to the proper ward for treatment of their injuries. "However, using every precaution possible, lice still persisted in infecting the hospital and finding their way to the clothes of doctors and nurses when making their rounds. . . ." Special suits had therefore to be worn by these. "The immediate isolation and careful disinfection of the patient and all his excreta is not all that is necessary to prevent the spread and contagion of this disease. Complete extermination of the lice first is an important consideration."

But besides being transmitters of typhus, lice have been proved by a similar series of observations and experiments to transmit to human beings a relapsing or recurrent fever, a much less fatal disease. In this case the microscopic organism, associated with both lice and men, has been definitely ascertained to be a Spirillum (Spirochaeta). Here it is not the bite of the louse when sucking human blood that introduces the spirochaete into our bodies, but when an infected louse is crushed by the finger tips or the nails and the juices of the insect are unconsciously transferred by touch to an abraded surface or to a mucous membrane, such as the conjunctiva of the eye, relapsing or recurrent fever is induced.

The abundance of lice on the western front in the present war is familiar to every one from such accounts of the "cooties," as the British soldiers term them, as that given in Empey's "Over the Top." That these statements are not overdrawn appears from the examinations made by the officers of the Royal Army Medical Corps and reported by Lance

Sergeant A. D. Peacock thereof. Ninety-five per cent. of the men examined were infested with lice. Two hundred and seventy-four infantrymen had, in round numbers, twenty lice per man; these men had seen six months of hard work at different parts of the line. On a shirt, in a condition generally termed "walking," were computed to be 10,000 lice.

Lice are transferred from man to man partly by the wandering of the lice, especially when men are compelled to sleep closely together, partly by the exchange of louse-infested clothing. The body louse lays its eggs chiefly upon the underclothing, the seams of garments being especially favored. From them they are not easily dislodged. The adult lice take refuge in the same places, nor do they shun the outer garments. Hence, as Peacock says, clean underclothing after men have bathed becomes reinfected from the outer garments within half an hour.

Many means are being employed to destroy lice and to keep the body free from them. Powders (those containing naphthalene or tar camphor being the most effective) are dusted into the clothing and on to the body surface; ointments, such as vermijelli, are applied to the skin and clothes are sterilized in steam, boiling water, cresol or other solutions. A list of the various methods made use of would fill several pages.

Yet in spite of the abundance of lice, thus far it has been possible on the western front to keep typhus patients and these insects apart, for Lieut.-Col. Copeman, speaking in February, 1917, said "with the exception of a few sporadic cases, both [English and French] armies have, thus far, been completely free from typhus during the present war, although the disease has been widely prevalent in the Austrian and German armies, more especially the former, and in certain of the enemies' prison camps."

By investigations comparable to those upon typhus it had been determined in the closing years of the nineteenth century that malaria is due to a microscopic animal, known as Plasmodium, which enters and devours the red blood corpuscles

and that it obtains access to human blood only when it has been introduced therein by an anopheles mosquito which had previously absorbed the plasmodium by sucking the blood of a malarial patient.

Malaria was the dominating disease in the French and Allied army in Macedonia in 1916 and, says M. Grall, surprised the observers by the multiplicity of cases, their gravity and tenacity and by the apparent failure of quinine prevention and treatment. The Anti-Malarial League of Greece is quoted by Dr. Niclot as stating the annual number of malarial cases in that country as 800,000 with 2,000 deaths. The principal species of Anopheles mosquitoes transmitting malaria, both at Salonica and in the interior, is known as *maculipennis*, but three other species of this genus, with similar potentialities, occur in Macedonia. Medical Major Mossé noted at Salonica that where there are many mosquitoes there are many sick, where there are a few mosquitoes there are only some sick; there are no sick where the mosquito is absent. Surgeon Major Recamier stated that neither in his sojourns in the colonies nor in the course of the Macedonian campaign had he ever seen such an abundance of *Anopheles maculipennis* as at Fergetor near the end of April, 1916, where each evening there were more than 100 in the officers' tents.

The Sub-secretary of State of the French Health Service having judged it necessary to send to the Army of the East, for the campaign of 1917, a permanent mission of antimalarial prophylaxis, this mission was placed under the direction of the "Principal Medicin" Visbecq who had been on the eastern front since the Dardanelles campaign and previously had a long experience in Indo-China. The Mission comprised 20 physicians, 4 administrative officers, 100 quinine officers and 300 men for sanitation work.

The country occupied by the troops was divided into districts, at the head of each of which members of the mission were placed. Their duties are to determine the endemic splenic index of the localities, to direct measures of anopheles-prophylaxis in the immediate neighborhood of the troops, to

observe and control the preventive quininization of the natives and of the soldiers. Each member of the mission was provided with an automobile, the quinine-administrators with bicycles to enable them to better cover their districts.

The anopheles-prophylaxis consists of oiling and filling in the small swamps near the camps, mowing the herbage, alternating the current of small slow-flowing streams, the employment of portable mosquito tents for individual soldiers, screening the barracks, hospitals and other buildings, as well as the collection and destruction of mosquitoes indoors by catching them by hand, by the use of cresyl vapor and by mosquito traps placed in dark corners.

The quinine prophylaxis is by 20 cg. tablets of chlorhydrate of quinine, to be taken 2 or 3 each day according to circumstances; for young children a solution of quinine in oil containing 20 cg. of basic quinine per cm^3, 10 drops of this solution sufficing for prevention in infants.

To instruct the troops and others of the dangers of mosquitoes and the usefulness of preventive quinine, posters, post cards and "images d'Epinals" are being employed by the mission, some of the post cards being illustrated by "un artiste humoriste."

But there are other ways than by sucking our blood in which insects affect human health. The common house fly has not the power of piercing the skin of man or other animals, although its relative, the stable fly, which so much resembles it in size and color as often to be mistaken for it, is a blood-sucker. The house fly lays its eggs upon many kinds of decaying material in which the maggots feed and the winged flies which eventually develop from these maggots may have the wings, legs and proboscis soiled by contact with the substance from which they emerge or upon which they subsequently feed. If these substances—as often happens—be human excrement containing disease-producing microbes, it is easy to see how such may be brushed off the exterior of the fly's body when it alights upon our food or upon our bodies, especially the mucous membranes of eyes, nostrils or mouth.

But research has further shown that disease germs may be swallowed by the fly, pass through its digestive system unharmed and be voided in fly-specks on our food or on the vulnerable parts of our bodies.

Diseases which offer themselves to these modes of diffusion by flies (although not exclusively carried by insects) are dysentery, diarrhœa, typhoid, cholera and tuberculosis. In our little Spanish-American experience of 1898, when over 20,000, or nearly 20 per cent. of the troops in camps in the United States, had typhoid fever, the official army report stated that flies undoubtedly served as carriers of the infection.

From July, 1916, to December, 1916, an epidemic of dysentery occurred in the United States troops in the El Paso district, Texas, of which Major Chas. F. Craig, of the Medical Corps, says: "The only conclusion possible is that it was carried by flies."

An interesting light on United States army conditions of this present year is given in a letter from one of our university's most promising students in the course in biology, now First Lieutenant C. A. S. Keeley, Co. L, 314th Infantry. Lieutenant Keeley writes (December 9, 1917):

"At Fort Niagara the mosquitoes were kept down by crude oil being spread on all the pools, and there were lots of pools you may be sure. The prevailing wind was from the west, that is, right off the lake. But one day there was an east wind which blew the mosquitoes from pools beyond the reservation into the barracks and caused us two uncomfortable days and nights. The flies were kept down wonderfully well, due to the strict regulations regarding refuse cans and construction of latrines. The refuse cans were always kept covered and they were scrubbed inside and out two and three times a week, or, instead of being scrubbed inside, some straw soaked with crude oil was burned in them. The manure from the stables was all sprayed with crude oil and a disinfectant. The water obtained from the Niagara river, which is about as polluted a stream as there is, was all treated with chlorine before we used it.

"When I came to Camp Meade it was little more than

started, and sanitary regulations were very loose, due to the workmen. There was refuse every place and lots of breeding places for flies. The latrines were not treated with crude oil, neither were the stables. The mess halls and kitchens were not screened. As a result, the flies were thick. It was really sickening to go to the mess hall. The food, without exaggeration, was black with flies. Fly-paper that was secured was covered in a very short while. As a result we were all taken with dysentery. Everybody thought that it was the effect of the water. A lot of the officers were sent to the hospital and we found that all the contractors had great difficulties in keeping men, because they left on account of the *water*. I was cramped up pretty bad myself for a while. You couldn't stay inside the barracks at all, as flies were too thick. I have seen outside of a kitchen door, where some kitchen waste had been carelessly thrown, literally black with flies, and they would rise in a cloud when you walked through them.

"With the enforcement of more regulations, and as the buildings were gotten up, the sewage was disposed of properly. There was diminution in the number of flies immediately and we all thought that the effect of the water had worn off. When the drafted men arrived the camp was very nearly free of flies, and then came the proof that the flies had carried dysentery. For, after asking the men whether the water had made them sick, the answer was 'no' in all cases.

"Boiled water was used for drinking purposes altogether until the pumping station was put into operation, and now we get the chlorinated water."

With all the knowledge of the causes and modes of transmission of disease which has been acquired by the observations, researches, experiments and martyrdom of men of science during the last twenty years, it is appropriate to ask what is being done to prevent the recurrence of these maladies in the armies which we of the United States are gathering and sending abroad to fight for liberty. Professor A. C. Abbott, of our own university, now major in the Medical Reserve Corps, United States Army, and sanitary officer at Fort Ogle-

thorpe, Georgia, has given me permission to quote from a letter dated November 13, 1917, as follows:

"As for insects, the subject has given us practically no concern since about the middle of July or first of August. Flies and mosquitoes had, prior to that time, every opportunity to develop and, I might say, *did so,* but the filling and draining of breeding places of mosquitoes and constant oiling of places that could not be drained or filled did away with them, as either a nuisance or as factors in producing disease in a short time. Early in the summer the flies were here in swarms—everything attractive for them was black with them—but vigorous and unremitting attention to picket lines, the prompt hauling away of manure, care of kitchen waste, absolute cleanliness about latrines, urinals, barracks, etc., etc., together with the use of sticky fly paper, fly-poison (formaldehyde) and fly traps lessened them to a point scarcely noticeable—certainly very much below that seen for the corresponding season in most of our big cities. Five or six weeks ago I had all the fly traps collected and stored for the winter. We have had no use for them since. The fly question is answered, in so far as we are concerned.

"We are not annoyed by any other types of insects. The officers and men have all necessary facilities for bathing, laundry, etc., and the men in particular are made to keep clean by regular inspection."

When we consider the vast number of deaths from diseases in previous wars, many of which diseases we now know to be wholly or largely diffused by insects; when we reflect on the sickness and death borne by these creatures to the civilian population even in times of peace; when we think of the truly enormous injuries inflicted on our crops, our forests, our stored food and our clothing, we must admit that insects exert an influence on civilization that has been totally, or almost totally, ignored by the professed historians of that subject. We must also concede the immense importance of entomological science: (1) in discriminating the kinds of insects, for not all of those even closely allied are detrimental to human interests; (2) in

elucidating their physiology and life-history, whereby alone we perceive their points of vulnerability; and (3) in learning their relations to the rest of the world and its changes, including its plant and its animal inhabitants. Unquestionably there is very much yet to be learned in all of these fields.

The application of these general conclusions to the present crisis manifestly demands that all the insect problems which in any way touch upon the health and efficiency of the army, and of the civilian population which stands back of and supports the army, should be investigated by men trained in entomological work. Dr. L. O. Howard, chief of the Bureau of Entomology of the Federal Department of Agriculture, tells me that in the British Army every expeditionary sanitation unit of 70 men, rank and file, now includes two trained entomologists. Dr. Howard has been in consultation with the medical authorities of our army on the whole question of expert entomological assistance in field and camp. Will we heed and put to good results our previous lessons on Insects and Human Mortality In War?

"Knowledge comes but wisdom lingers and he bears a laden breast,
Full of sad experience passing to—the stillness of his rest."

THE PHYSICS OF COLOR

By Arthur W. Goodspeed

Professor of Physics

Any treatment of color from the physics side, even tho brief, must be introduced by a consideration of the mechanism of the production and propagation of light. Two theories have been prominent in the history of the subject, the "theory of emission" and the "wave theory." As Newton was the first to deduce the mathematical consequences of the former theory he has been usually regarded as its author. The latter one was propounded by Hooke in 1664, and was developed a few years later by Huygens.

In the emission theory a luminous body is supposed to send forth continuously in all directions material particles of extremely small size. In the wave theory the body is supposed to set up vibrations of an elastic ether, which are propagated as waves in all directions. This ether medium is supposed to pervade all space, to have extremely small density and enormous elasticity. These two properties are absolutely necessary to make possible the very high speed of all radiant energy as found by experiment. Both theories were for many years subjected to the only logical tests, namely, the comparison of their theoretical consequences with observed phenomena.

Very strong evidence in favor of the wave theory was due to Young and Fresnel, early in the last century, who devised some very remarkable experiments in interference. The interpretation of these interference experiments, on the emission theory, would require the assumption that certain particles of matter, when added to others, will result in zero matter. This seems unthinkable. If, however, light be a wave motion it ought to be possible to bring two waves together at the same point, but in opposite phases in such a way as to produce darkness. Such is the fact.

An interference experiment in sound will enable us the better to understand one in light to follow. I have here a tuning fork capable of sounding middle C, resulting from a vibration frequency of 256 per second. I have also this Helmholtz resonator in tune with the fork. As the prongs of the fork approach each other a wave, starting with a compression, travels in directions perpendicular to the line of motion of the prongs; simultaneously, a wave, starting with a rarefaction, moves along the line of motion of the prongs. These two waves may then be said to be in opposite phases, and their components along a diagonal line, making an angle of 45° to the other two, will destructively interfere. Note the result as I roll the fork over the mouth of the resonator. At the two extreme positions we have a full tone, while half-way between these we get silence.

One of a series of experiments devised by Fresnel to show light interference has been arranged. Without going into detail, I may say that the series of bright and dark bands seen upon the screen shows respectively the interferences in the same and in opposite phases, in the former case the average brightness of the screen being greatly increased, and in the latter reduced nearly to zero. The experiment also serves even to measure approximately the length of the waves which are interfering. This is a simple function of the distance of a band to the center of the group and of the distance of the screen to the light source. The average wave-length here interfering is found to be about 6000 Angström units (1 Angström$=10^{-8}$ cm.).

Perhaps the strongest possible evidence in favor of a theory is given when it predicts previously unobserved or unexpected phenomena which are afterwards found to occur.

A case in the history of astronomy furnishes a wonderful illustration. Working on the assumption of the truth of the inverse square law of gravitation, the planet Uranus failed to move quite in the path the computers predicted. The irregularity, however, could be accounted for in accordance with the law by assuming the existence of a previously unobserved body

at a certain determined place in the sky. The calculations were independently made by both Leverrier, of Paris, and by Adams, of Cambridge, England. The former wrote to his colleague Galle in Berlin, who, by directing his telescope as instructed on the night of September 23, 1846, found the new planet Neptune in almost exact accordance with prediction and within half an hour after the search was started. Indeed, what stronger evidence of the truth of the general law of gravitation could be asked. So, too, in physics, the somewhat obscure phenomenon of conical refraction would hardly have been observed experimentally had it not been a logical conclusion of the wave theory as set forth mathematically by Sir William Hamilton, who stated that if a double refracting crystal be cut in a specified way and light be transmitted as described a new phenomenon should be observed. Dr. Humphry Lloyd, then Provost of Trinity College, Dublin, and a friend of Hamilton's, tried the experiment, verifying the prediction and adding new and almost indisputable evidence to the wave theory.

If the light is composed of waves, the various properties and differences in the behavior of lights of different kinds and from different sources must depend on the length of the waves, their amplitudes and their shapes. Waves cannot differ in any other features. Various models have been devised to illustrate this. In light the vibrating parts of the medium have been shown to move across the line of motion of the wave, and light is, therefore, transverse wave-motion.

The complexity of ordinary light is demonstrated by the classical experiment of Newton, who passed a narrow stream of sun light through a triangular glass prism. The result is the production of a long ribbon of colored light, due to the dispersion of the original beam. The experiment is easy to perform, using the electric arc as the light source, and the spectral colors will be observed in the order noted and named by Newton, viz.: red, orange, yellow, green, blue, indigo and violet, each, however, grading imperceptibly into the next. If now we measure the lengths of the waves of these colors, we

shall find the range rather small from the extreme red at one end to the least visible violet at the other. The average wave-lengths of the different colors have been found by well-known methods and are as follows:

Red	0.000070	cm.
Yellow	0.000058	"
Green	0.000052	"
Blue	0.000047	"
Violet	0.000040	"

On comparing the first and the last of this series it will be seen that the wave corresponding to red is less than twice as long as that of violet, i. e., using the nomenclature of music, the color range visible to man comprises only about an octave. It is a well-known fact that in all wave motion the product of the wave-length and the vibration frequency of the body producing the wave is equal to the speed of propagation, or $v=nl$. In the case of light, as we have seen the wave-length, l, is very small; the speed, however, is very great, 3×10^{10} cm. per sec.; from this it follows that the frequency must be enormously great, which leads us to believe that the vibrating bodies must be extremely minute. All this is entirely consistent with the results of modern researches on the ultimate structure of matter and the electron theory. The frequencies in the case of the colors red and violet are as follows:

Red	4×10^{14}
Violet	7×10^{14}

That is, if the ether on the eye retina vibrate at either of these rates, the sensation of red or violet results, as the case may be.

It is to be noted that the range of visibility of light waves is far less than that of audibility of sound waves, the latter being ten to eleven octaves, and the frequencies 30 per second to 40,000. It must not be supposed, however, that the spectrum is thus really limited at either end where the eye ceases to be stimulated. A number of methods have been devised to detect and to measure radiant energy of wave-length many fold

longer than the visible red and shorter than the violet. Wavelengths varying from about 0.1 of an Angström unit, the γ -rays from radium, to thousands of meters, the waves used in radio telegraphy, have been measured or estimated, though there are two comparatively short gaps yet to be covered experimentally. The gap in the short region has, during the past year, been considerably reduced by the remarkable work of Dr. Bazzoni, one of our staff, in connection with Professor Richardson in London. Their results have just been published in the Philosophical Magazine, and indicated ultra violet waves as short as 400 Angströms in the radiation from helium. The shortest hitherto detected were 600 Angströms by Lyman, of Harvard. I may say that a continuation of the work by Richardson and Bazzoni, though at present interrupted by the war, promises much towards a still further reduction of this gap.

It may easily be asked what can be the possible use of all this invisible light? In answer, it must be remembered that vegetation requires the incidence of radiation for its proper development, and it is probable that the longer and short waves are just as important as the visible ones. Then, again, mankind, with his usual conceit, should not think of himself as constituting the chief seeing agent for which light exists. There are, and have been in the remote past, many animals far differently constituted as to their seeing apparatus from man. Contemplate the vast range between the elephant and whale, on the one hand, and the ultra microscopic animalculæ on the other, and the need for waves of lengths widely different from those adapted to our own eyes is at once evident. "Seeing in the dark" constitutes a flat contradiction in terms.

At present, however, we are only concerned with the colors of the visible spectrum and their composites. Let us consider then the function of the human eye in the interpretation of color. Similar color sensations may be produced in different ways. For example, if we cover all of the spectrum except the yellow and look at it, we get, of course, the sensation of yellow. If, again, we select a certain part in the red and one

in the green and direct these simultaneously to the eye we shall experience the same sensation of yellow, and, queerly enough, the eye alone is quite unable to distinguish between these two yellows. I myself observed some years ago, while photographing some flowers, that the ordinary yellow daffodil emits little or no yellow light. What the eye receives from the daffodil is a mixture of red and green light, and these produce the sensation of yellow, which it is unable to distinguish from the pure yellow of the spectrum. Again, if a spectrum or pure green be superposed upon a spectrum violet, a blue sensation results which the eye cannot tell from a spectrum or pure blue. It must be noted here that I am speaking of the mixing of colored lights and not of colored pigments. Since, then, the sensation of yellow may be excited by the joint action of red and green, and that of blue by the similar action of green and violet, it is clear that by selecting red, green and violet as primary colors, all color sensations may be produced by them. This theory of color sensation originated with Young in the early part of the last century, but its acceptance by physicists is due to the researches of Von Helmholtz. This theory supposes that there are in the retina of the eye three kinds of nerve terminals, one of which when excited produces the sensation of red, the second that of green, and the third that of violet. These three sets of nerves are respectively excited by the longer waves, those of intermediate lengths, and those of shorter lengths. Thus, when both the nerves sensitive to red and those sensitive to green are excited, a yellow sensation results and when both the green and violet nerve ends are stimulated blue results.

On this theory color blindness is well explained. The most common form is red blindness. To persons thus defective the blossoms of the red geranium and the rich red of cherries, or of strawberries, are distinguishable from the green leaves only by their form. Clearly, on the Young-Helmholtz theory, color-blind persons have eyes deficient in one or more of the three kinds of end organs above mentioned, or, if present, some may be unable to perform their normal functions. Again,

subjective color impressions are easily explained as due to retinal fatigue. For example, if the eye gaze for thirty seconds or more at a bright red spot and then be turned quickly toward a white screen a bluish-green spot will appear. Here, the red organs having been fatigued, are unable to supply their share of the effect that should be produced by white, and the unfatigued green and violet organs produce a predominating effect. The basis of this ingenious theory is entirely physical, not physiological, as no such distinction of end elements as it requires has as yet been detected on the retina. It has, however, general acceptance among physicists.

Let us now consider the objective side of color. Why is the rose red, or leaf green? Let us see, perhaps it isn't.

This is not the season for roses or leaves, but I have brought some fairly good substitutes in these colored ribbons which the ladies will all recognize as having appropriate places (or otherwise) as articles of adornment. I shall also ask the great privilege of using, just for illustration, of course, some of the pink cheeks and glowing lips I see before me. A part of this experiment has continued ever since you came in. You have been, no doubt, mentally commenting on each other's personal appearance. Possibly, somebody has a bright new dress that has not yet appeared at the Tea Club and it has come in for admiration or otherwise. In order to be quite on the safe side for material for display, I have brought also this bed "coat of many colors," which my mother fashioned during the last ten years of her life. Please look at it by means of the ordinary light of the room. Now we will look at it by the light of this mercury vapor lamp, and the whole appearance is suddenly changed; few of the colored pieces which you recognized by ordinary light are at all the same, and yet the various fabrics have been in no way changed. In short, the rose is *not* red, unless we bathe it in light of the proper constitution. Most red roses would be quite black in light from a mercury lamp, for the reason that the mercury vapor light has no red rays in its make up. Please, now, observe each others faces and it is clear that all the skill em-

ployed in prinking for our party would be wasted were we to use only mercury lamps. The reason that it is undesirable to select colored goods by artificial light is that such light is seldom of the same composition as day light. A surface, therefore, appears colored because of its ability to reflect certain waves and to absorb the rest of those incident upon it. If then the color that a body can reflect is not present, that body must appear black.

Let us now try some experiments with colored glasses. We have arranged to mix upon a white screen the colors red, green and violet. This is easily done by filtering the white light from an arc through properly colored glasses. From what has been said it is clear that a glass is red when it transmits red light only and absorbs all other colors, and similarly for green and violet. The result is before you. Where the red and the green spots overlap the screen produces a sensation of yellow, and the green and violet similarly produce blue. Further, if all three colors be made to overlap, the screen looks white. Keeping this in mind, let us superpose the glasses; if red and green make yellow we might expect the light on the screen, which has passed through both a red and a green one, to be yellow; but we note that the screen is quite dark, and a moment's consideration will show us that it should be. The red glass transmitted only red light, while the green glass is not capable of passing red, therefore a combination of both cuts all color out. This case should be carefully distinguished from the other in which the eye is simultaneously stimulated by both red and green, giving the composite sensation of yellow.

In the light coming from mixed pigments we have still a different case. These are usually composed of powders, the fine grains of which are transparent and which reflect superficially, therefore only a small part of the incident white light, the rest penetrating and being reflected at surfaces within. The emitted color then is a transmitted one, and if, say, red and green powders be mixed, since the red can't transmit green, nor the green red, little or no color will be seen and a

neutral gray will result, due to the mixture of the black, if we may be allowed the term, and the small quantity of white reflected superficially.

Let us now consider some less familiar examples of color production. The refraction or bending of light as it passes from one transparent medium to another, as from air to glass, is well known to all, but the phenomenon of double refraction is not so familiar. This happens in the case of all crystalline substances, except those belonging to the cubical system, and consists in general of the separation into two parts of any beam falling on the surface of the crystals. For example, this beautiful crystal of Iceland spar causes any object viewed through it to appear double, and other simple experiments make the phenomenon quite clear. Further examination of these beams show them to have lateral properties quite different from those of ordinary light. Easily constructed models show that the vibrations of each beam have been brought into one plane, while the two planes are perpendicular to each other. Such a beam of light is said to be polarized, and very interesting color effects may be produced with polarized light.

A Nicol prism is a device made of Iceland spar which transmits a single beam of polarized light, the other being absorbed within the crystal. The supply of large Iceland spar crystals was exhausted many years ago, and the pair of Nicols which the university is fortunate to own are doubtless two of the largest in existence. We will now use them to show an important difference between polarized light and ordinary light. If a beam of light be passed through one of the Nicols it is polarized as has been said. If now the other Nicol be placed in its path it will be noted that it is capable of complete transmission only in certain positions of the Nicol, and that it is totally extinguished in positions at right angles to the former ones. If now a plate of transparent quartz be inserted between the Nicols while the light is extinguished, two things are noticed, first, light reappears, and second, it is colored. We can explain both. In the first place, when the second Nicol

extinguishes the light polarized by the first, it is because the plane of polarization is in a certain position with reference to the principal section of the analyzing Nicol. Now quartz and certain solutions, notably sugar, have the power of rotating the plane of polarization of light as it is transmitted, and, therefore, it is not then in a position to be completely extinguished by the second Nicol. The light will therefore reappear when the quartz plate is inserted. Again, the planes of polarization of the different colors are rotated different amounts so that the transmitted components do not mix to produce white. The spot is therefore colored. It is interesting further to note that the resulting hues transmitted by the analyzer in two positions, ninety degrees apart, are complementary. Most crystalline substances when viewed by polarized light present very beautiful and characteristic color effects. The following photomicrographs, as you will see, illustrate this very strikingly. They are microscopic crystals of salicine, hippuric acid, narcotine, and acetate of manganese and are quite invisible even under the microscope when viewed by ordinary light.

Still other beautiful color effects are produced by the interference of light reflected from the nearer surface of a very thin transparent film with that reflected from the other surface. The latter having traveled more than twice the thickness of the film, it is retarded behind the former, and this retardation may be as little as a half wave-length of the incident light. In this case there is destructive interference; if the retardation be twice as much the two rays will conspire to produce increased brightness of that particular color. The varying colors of soap films, films of oil on water, those of mother of pearl, etc., are all due to interference.

We must now consider briefly one or two of the methods which seek to represent natural colors in a picture—sometimes termed color photography. The crystal pictures which we saw a moment ago were made by a process developed some ten years ago by the Lumières of Lyons, France, on plates, named by them autochrome plates. Before describing

this in detail, it should be said that the fundamental principles upon which it is based were worked out twenty-five years ago, or more, by F. E. Ives, of our own city. By an instrument invented by Ives, and called a kromskop, one of which is before you, the eye is enabled to view, in nearly their natural colors, various objects photographed. Three separate negatives are made by exposures through three primary color screens, red, green and blue-violet. These negatives form, therefore, color value records of the light coming from the object. From these negatives are printed three positives which are illuminated in the kromskop, each with its appropriate color, and by a clever system of reflectors the eye is made to see the three images exactly superposed in a single plane.

The result is very beautiful but is not the sort of color-photography usually thought of when the subject is discussed. What has long been desired is a method whereby, with a simple exposure with an ordinary lens, a picture can be produced showing to the unaided eye the object in its natural colors. While this perhaps has never been strictly realized, an approximation was attained by the Lumières already mentioned. Let us consider their method somewhat in detail.

Fine starch grains, of diameter between 0.015 mm. and 0.020 mm., are prepared and dyed in three groups, one red, one green and one blue-violet. These three are then thoroughly mixed in such proportions as to present a neutral gray. The mixture is then skillfully dusted, one layer deep, on a glass plate coated with a sticky substance. The covering is then rolled flat and varnished. A very sensitive panchromatic photographic emulsion is then coated over this and dried in the usual way. Since the emulsion cannot be made equally sensitive to the three colors coming through the starch mosaic, it is necessary to reduce the intensity of the most active, the blue, by means of a yellow screen placed before the lens. This screen, and the mosaic as well, both absorb much light, making it needful to increase the exposure time several fold. In making the exposure the plate is placed in the holder glass outward, instead of film outward as usual. The light from

the colored object therefore passes through the colored starch grains before reaching the sensitive coating. As a type case, we may consider photographing a red rose, a green leaf, and a daffodil, the color of the latter being a mixture of red and green. It may be a surprise to some that a daffodil has absolutely no yellow in its color. The image of the rose records itself on the film only behind the red grains, since the green and blue ones are opaque to red. Similarly, the green leaves are recorded only behind the green grains. In the case of the daffodil, however, since both red and green come from it, its record is made partly behind the red and partly behind the green grains. Similar reasoning would apply if some blue object were in the picture. Now, by a chemical treatment, which we will not detail here, the plate is prepared for viewing by transmitted white light.

Since the color grains are so small they cannot be separately distinguished by the eye and the latter receives only a composite impression. If viewed under a sufficient magnification the separate colored particles can be, of course, distinguished. The photomicrographs of crystals in polarized light were made on autochrome plates by the Lumière process and serve with other specimens we have here to show what beautiful results may be obtained. Portraiture is somewhat difficult because of the rather long exposure necessary.

Let it not be supposed that such scientific descriptions as those we have made tend in any way to rob nature of her beauty, or that our delightful sense of color is in any danger of being blunted by thus tracing out, as far as may be, the causes and sources of our sensations. The poets have occasionally said harsh things of science—indeed, one goes so far as to stigmatize the man of science as one who would "untwist the rainbow" and "botanize upon his mother's grave," and another thus laments dispelled illusions:

"When Science from Creation's face
Enchantment's veil withdraws,
What lovely visions yield their place
To cold material laws."

Now, in the cases we have been considering, the scientific view is surely as beautiful as the ordinary one. We can, it is true, no longer regard the objects as having in themselves the colors which common observation attributes to them, but we look upon the material world as being, so to speak, the neutral canvas upon which Light, the greater painter, spreads its varied tints, although, unlike the real canvas of an artist, which is not only neutral, but receives indifferently whatever hues are laid upon it, the objects around us exercise a selective effect —as if the picture of nature were produced by each part of the canvas refusing all the tints save one, but itself supplying none. The tendency of the study of science to increase our interest in the great spectacle of nature, and to enhance our appreciation of her charms, has been more justly indicated by another poet, thus:

"Nor ever yet
The melting rainbow's vernal tinctured hues
To me have shown so pleasing, as when first
The hand of Science pointed out the path
In which the sunbeams gleaming from the west
Fall on the watery cloud, whose darksome veil
Involves the orient."

OUR "ALIEN SPEECH"

By Clarence G. Child

Professor of the English Language

In the summer of 1915, while the railroad strike was threatening, I chanced to be with two railroad men who had taken the long railroad journey from Washington to gain two days' rest among the spruces and granite peaks of the New Hampshire hills. Their work, the impending crisis, still pursued and possessed them. Their talk went back to it again and again —the immediate crisis of the strike, the greater crisis in which the world was and is, and America's part and duty in it. I listened eagerly, as one listens to men of large affairs, actively engaged in the thick of things, men of large ability, opportunity, special information. I listened—but I learned nothing. Each spurt and eddy of talk ended with an abrupt pause, a shrug, "Who knows?" "Perhaps." The bulk, the gravity, the complexity of things defied analysis and prophecy, too much for them as for you or me. "These men, who know so much, know nothing," I said to myself. "They are meeting what the day brings as best they can. So it must be in days like these."

But, so I thought, behind the phantasmagoria of the day's events, behind the shifting maze of rumor, empty talk, ill-found opinion, the great complex of forces and happenings must be slowly resolving a changed order, a changed world, of what shape no man can tell. If so, then what is stable and unchanging in all this shift and change, what holds fast, can come through unscathed, linking today with yesterday, making the new one with the old.

It pays to ask that question, though the answer be one we should know well. What shall hold fast in the America of the future linking it with the America of today, of that year 1915, separated from it by happenings so momentous, with the America that was before the war began. Let us go back

to that America, if by an effort we can. It is worth while, if only to realize how strange, how remote it is, how widely sundered from the America of today.

Looking back from that standpoint before the war began, three periods of fifty years separate us from the beginnings of our history as a nation and the winning of our freedom. Through the first two of these periods we were a young nation, sharply conscious of our new liberty and the struggle which achieved it, acutely sensitive in regard to our youth. During the last of these periods, once the Civil War was over, we had quite forgotten the insecurities of a freedom newly won, we were preoccupied with the proud security of our assured and growing strength. Those of us whose memories run back through these fifty years know how profoundly they altered the face of things, and not only the surface consciousness, but the background of men's minds—put that new birth of a nation into a dim retrospect in a way not possible for our fathers and grandfathers, even if they did not, we trust and believe, save in accidentals and externals, bring an end to the old simplicities and sanctities of American life. The change in great part was one in material conditions. We realized largely, grossly, in those fifty years upon our national resources—brains, land, lumber, iron, copper, oil. We spent our wealth largely, grossly, often wastefully and vulgarly, at home and abroad. We performed wonders of industrial and financial expansion. We accomplished superhuman engineering feats, and challenged the world by the achievements of our inventive genius—became dulled indeed to each daily new marvel that arrived almost as punctually as the morning paper, took them as a matter of course, unless the wonder of them was forced home upon us—as when one might sit, for example, at a New York dinner table, and while across the cinema-screen there flickered the moving panorama of sharp sunshine, beach, cliffs, tossing breakers, in California, one heard though Pittsburgh, Cleveland, Chicago, Denver, Wanamucca, across those silent sentinels of time, the

Rockies, the actual break and roar of the long rollers of the ocean, misnamed the Pacific, on which Cortez gazed silent—a modern miracle accomplished as a practical fact within thirty odd years.

Those fifty years rise like a wall between us and the America of the years before them. Memorials of that past time we have—historic buildings, old furniture, old silver, laces and brocades folded away in their chests—precious memorials. But there is little left of a vivid personal contact with the life of that further past, even for those of us who have more than rounded the half century. My thoughts turn back to a small boy, a very grubby small boy, nearly fifty years ago, proud as he dreamed over his history book that he was an American, proud, too, with an innocent childish vanity, to belong to one of the original thirteen colonies, albeit the least. By chance of temporary occupancy, he was born in a house with a secret staircase, in a room where George Washington did actually sleep. He heard each night the curfew ring from a steeple saved from burning by the British by the crown above its weather-vane. He might daily hear the town-crier ring his bell and cry "Lost, strayed, or stolen." The family doctor wore black and a stock and carried a gold-headed cane. His father changed to a Geneva gown and bands when he preached —he knew a veteran of the War of 1812 with a hook for a hand—himself saw a smuggler with a long yard on her foremast brought into harbor, and a privateer (from which he bought a cutlass when her arms were auctioned)—with his own hands had dug out a bayonet from a hollow above the fire-place of a house in which a British soldier had been murdered—and in Georgia, on General Nathaniel Greene's old plantation, where also Light Horse Harry Lee lies buried, had pressed his way through the palmetto scrub to see the hole from which a buried treasure had been dug in the early years of the century, and heard the story from the venerable Chief Justice of Florida who saw and talked the night before with the men who made off with it, men from the boy's own home

town in New England who had slipped down in a fishing-smack for the venture.

How impossible such experiences, such vivid personal links with the Revolutionary time, or near it, seem today. But, to that boy, the Colonial period was far less real and instant. Necessarily so—he might look at the pineapple, symbol of the West India merchants, carved above the door of the house where he was born; stand by the old slave-barrack, used now to store lime, cement, and sand; he knew indirect descendants of the old pirate-slavers (no direct descendant remained of those enriched by that infamous traffice in molasses, rum, slaves—a visible judgment); he had seen old ships' ledgers with their manifest of cargoes of wet goods and dry-goods. He did, as a fact, come near to the old life, though he did not realize it, when he went to the seventy-year-old shoemaker, who made shoes that never wore out, with a pride in his craft and in the fear of the Lord; when, in the old red shot-tower by the harbor side, he watched the molten lead drop into shining bullets down its hollow shaft of dusk; when, in the rope-walk, he saw the cables of stout hemp twisted to withstand the hurricane; when he lingered in the sweet air of the boat-builder's shop with its fair shapes growing slowly among the shavings, and the apple-wood knees seasoning in the cove-water at the back, or ventured into the sail-loft where the old skippers told their yarns at the wide doors overlooking the harbor, or played checkers on the low bench along which the sail-maker hitched, stitching with magical swiftness with his needle and palm, picking up their pieces and moving to another board scratched farther along the bench when he approached them; or, when on his walks, coming to one of the old windmills, built long before the Revolution, as many a boy in Colonial times must have done, he sidled carefully, his back to the warm shingles, behind the circling wings, and tasted the delicious fright of seeing the great arms swoop down a foot away as if to snatch or batter him, while the free and riotous wind from the blue sparkling water over yonder

seemed suddenly and magically stilled; or, when, very lonely and homesick, he stayed over Sunday in the home of the last descendant of the Pynchons, amid its shadowed orderly silence, redolent of theology in mouldering brown calf, alleviated only by apples and cookies from the kitchen, and heard the dear old gentlemen, tall and unbowed with his ruddy face and silver hair, a veritable Gilbert Stuart in the flesh, read the famous verse in Jeremiah, beginning "Oh earth, earth, earth," as "Oh yarth, yarth, yarth."

These things, now passed away, did not make the Colonial period real to him. There was not, as there was even for Revolutionary times, instant kindling revelations of the life of his forbears, farmers, elders, ministers, teachers—a sense of the unity of his time and of that life as it was lived and as it drew its source from the mother country beyond seas. All this was nearly fifty years ago, but what he did not achieve then could be achieved for him in an instant, by chance, in later years. He was at work in a remote nook of New Hampshire with a mason, a man, quiet and gentle, who said to him: "That long shovel will weary you. Better sit ye down and rest ye a while." That is as beautiful as music—it is the speech of Shakespeare. Or, when, beside the Swanannoa, in North Carolina, turning in beside a company of moonshiners riding to court at Asheville, he asked an old man if he was going as defendant or witness. "As witness," the old man said, "for a friend," and added, "Yis—he hath holpen me and I sal help him"—the very speech of Chaucer. There may be that in the magic of the spoken word, heard here today in America, that shall resolve time to nothing and flash before the inward eye an instant vision of the procession of the years and of the generations of men as they were born, toiled, joyed in giving life to children, grew gray and died—all of them one from the western margin of this mighty breadth of continent back to the tiny island fastness girt about with its protecting seas from which that speech came.

Such is the instant and living witness of the spoken word.

If now you shall ask for the faith in which these men lived, and died, turn to the testimony of the written word. Whose are these sentences?

It may seem strange that any man should dare to ask a just God's assistance in wringing their bread from the sweat of other men's faces, but let us judge not that we be not judged. . . . .

The God who gave us life gave us liberty at the same time.

Rex and Tyrannus, king and tyrant, are very different characters; one rules the people by laws, to which they consent; the other by his absolute will and power. That is called freedom; this tyranny.

To make the people fittest to choose and the chosen fittest to govern, will be to mend our corrupt and faulty education, to teach the people faith, not without virtue, temperance, modesty, sobriety, parsimony, justice; not to admire wealth and power; to hate turbulence and ambition; to place everyone his private welfare and happiness in the public peace, liberty, and safety.

Thy gentleness cometh from God alone—whence by his loving mercy cometh gentlehood—it was in no wise bequeathed us with our place.

Therefore, it seemeth better, if you agree, that we cause, if we may, God willing, have peace, all freeborn youth to be set to learn . . . till they can read English writing well.

These are all one in language, are they not? They are one, are they not?—in meaning, and a meaning truly American, though they run from Abraham Lincoln, in 1865, through Jefferson, William Penn, John Milton, Geoffrey Chaucer, to the greatest and noblest of kings, King Aelfred, who saw, in the ninth century, that there could be no better foundation for a state than education. A written record of one thousand years.

No American who knows doubts for a moment this unbroken tradition of speech and faith. But it must continually be reaffirmed, lest one forget our direct and peremtory right to our tradition. Now, speech and the creed and faith it

bears are one. Consider briefly this fact of our speech—of so vital moment, whether to those whose forbears came here in the seventeenth century or those whose fathers landed a year or two ago at Ellis Island—this speech of ours in itself and in relation to the speech of England.

If you will look back to those whose lives bridge from Colonial times to the period after the Revolution, you find no question raised concerning the English of America—nay, rather, men of intelligence comment upon our speech, discuss it, exactly as if they were in England. The great Dr. John Witherspoon, Scotch-born, but true American, who could not see how anyone who hesitated to sign the Declaration of Independence could consider himself a free man, wrote essays on American words about 1761, published separately forty years later in Philadelphia. In 1768 Franklin, with characteristic breadth of scientific interest and clarity of mind, proposed a new alphabet and mode of spelling. Patriotic sensitiveness as to differences between English and American usage does not appear till after the Revolution, and springs not from a sense of lack or fault in American English, but rather unwillingness to use English text-books with what they called their Cockney pronunciations. America was eager for learning, and a multitude of primers, grammars, spelling books appeared from every town and village that had a printing press, books either home-made or adapted from English books. English authority was not to rule. Most largely counted in this decision the zeal, energy and courage of a remarkable man, spurred on by real scholarship, personal need, ambition, and no small vanity. He cared not, he said, who might labor to improve the literature of a country, if he were permitted to write its spelling book. And, at the age of twenty-five, Noah Webster rode out with his saddle bags stuffed with his Institute of Learning, paying his way by lectures on the English tongue, soliciting patronage from "worthy characters," and pleading for copyright before the legislatures of the various states. Not then could he have remotely dreamed that more than fifty millions of his speller would be sold, or that it

would be selling today. Three campaigns meant most to him—to capture Boston, Philadelphia, and the South. He was specially eager regarding Philadelphia, the first city of the Union, as he calls it. He came to Philadelphia in 1786, was courteously received by Dr. Franklin, who gained him permission to lecture at this University. Six days later he went to the Assembly. We may not doubt that Mr. Webster had no little pride in his strongly marked features and fine fresh color. He regarded himself as a beau, was a member of the Hartford Assembly, and had enjoyed himself mightily at balls and routs in Baltimore and Washington. In his diaries, one reads: "Visited the ladies in the evening as usual. If there were but one pretty girl in town, a man might make a choice—but among so many! one's heart is pulled twenty ways at once. And when one chooses, then the lady has to make her decision." Of the Friends' Meeting at Newport, he records: "Not a word spoken all day," adding that he was sensible of the "silent exhortations" of a charming damsel near him, "such blushes, such lips, make one feel devotion." But, in Philadelphia, he writes, sadly: "Go to the Assembly: the ladies here will not dance with strangers, if they can avoid it." Poor man—this was made up for perhaps by the fact that while teaching here the following year, at the Episcopal Academy, he met his future wife, who was visiting her sister-in-law, Mrs. Ingraham—of whom her brother-in-law, Dr. Nathan Appleton, wrote him shortly after from Boston how much she had enjoyed her Philadelphia visit: "No wonder her fine eyes and amiable deportment have made so much havoc among the beaux and gained her so many good acquaintances among the judicious and discerning."

It is worth while placing our great lexicographer in a more human and amiable light than his biographer does. He should be remembered not alone for the fifty million copies of his speller, and his dictionary, but because in no spirit of narrow and ignorant patriotism, he recognized that American English displayed peculiarities and vulgarisms, but protested against accepting as authoritative British peculiarities and

vulgarisms found in English books. So, also, while staying with General Washington, he persuaded him not to send to Scotland for a gentleman to serve as secretary, accountant and tutor to the Curtis children, saying it would not look well just after we had won our freedom, so that Washington finally selected an American.

Sensitiveness to foreign criticism did not spring from a belief we were justly open to blame, but from the assaults and ridicule we were subjected to from without. Dr. Witherspoon had coined the term *Americanism,* but it was the British reviewers who made it a term of reproach. That Pope had pilloried Philadelphia poets long before in the Dunciad was a compliment rather than otherwise. But now the Quarterly, the Edinburgh, the British Critic, the Annual, and other reviews began to pick on American books and, in addition to the term *Americanism,* used even *Indianism,* to make us feel our barbaric condition and shoot their burning arrows into us. Not all of this was malice, for it must be remembered that it was the childish notion of the time that the standard of English had become forever fixed in Dryden, Pope, and Addison; a writer would exclude from his prose every word not to be found in Dryden; and, a member of Parliament might be jeered to his seat, so runs the story, for using the word *starvation,* and be called Starvation Dundas thereafter. But malice is plain when the Quarterly, in 1812, reviewing an English book, John Galt's life of Wolsey, says the sort of style it displays, if not checked, "will leave us no right to complain of the barbarisms of America." A long line of detractors follows, criticizing not only our speech, but our dress, manners, and morals—poor Mrs. Trollope and Charles Dickens are notable examples. This sort of thing is not yet at an end. A sheaf of quotations from recent British sources lies at hand, which speak of our speech as the "American language," of books as "written in American," of a book as "clever, though not written in English." A number are plainly meant to be facetious, some are, as plainly, quite serious. It is a trivial matter which might be dismissed with a shrug and a smile—

those who could so write are simply ignorant—but it is worth while to consider for a moment the issue thus raised of the superficial differences between British speech and ours.

Observe this surprising contradiction:

Mr. Henry James, to the end of his life a true American, returning to this country after a long absence, lamented the slovenliness and negligence of the speech of his countrymen. And Mr. Kipling has written of us: "They delude themselves into the belief that they talk English—*The* English. The American has no language. He has dialect, slang, provincalisms, and so forth." And he has described us in this wise:

> The Celt is in his heart and hand,
> The Gaul is in his brain and nerve,
> Where cosmopolitanly planned
> He guards the Redskin's dry reserve.
>
> His easy unswept hearth he lends
> From Labrador to Guadaloupe,
> Till, elbowed out by sloven friends,
> He camps at sufferance on the stoop.
>
> Calm-eyed he scoffs at sword and crown,
> Or panic-blinded stabs and slays.
> Blatant he bids the world bow down,
> Or cringing begs a word of praise.
>
> How shall he clear himself, how reach
> Our bar, or weighed defence prefer,
> A brother hedged with alien speech
> And lacking all interpreter.

Now, on the other hand, at almost the same time that Henry James lamented our sloven ways, Ambassador Page, at a dinner in London, paid tribute to the high average quality of American English. And Continental scholars, like Viëtor and Jespersen, give it its just place beside British English. And, the English traveller, if honest, confesses it not markedly different—like the cheerful Cannon Hannay, for example, who feels disappointed that his bewildering sensational experiences

of elevated railways, subways, skyscrapers, elevators, are not diversified by the language of Bret Harte.

How explain so flat a contradiction? Which of the two groups of critics is right? How shall one decide? One thinks at once the question must be decided by some standard—the standard of the language one hears so much of. But what is the standard? Is there such a standard? The speech of London, you are perhaps told even by people who should know better, is the standard. Has then a standard been fixed and accurately determined in London—is there a prime meridian of speech passing through Greenwich—or have platinum originals of pronunciations, words and phrases, been deposited in the Exchequer Office in London and kept there at a temperature of 62 degrees Fahrenheit, like the Imperial Yardstick? Has London the standard—then, where is it, in what rank of society? Is it the speech of today, or yesterday, or ten or a hundred years ago? Suggest in England that London English is the standard, and the upper Midlands and the North rise in their wrath—and Dublin raises her equisite voice from across the Irish Sea. In point of fact, not London, or the North, or Dublin can set a standard for themselves or for each other, or for Canada, or for Australia, or for New Zealand—or, for America. The only standard there can be, or need be, the world over, is the local speech of educated and gently-bred and travelled persons, representing the refined tradition of the previous fifty or a hundred years.

But, observe—England does not chide or ridicule her imperial children as she does the unruly and shaggy Enoch of her brood—not for them the joke, the pained remonstrance, the accent of despair—not *they* make her fear even she herself may be corrupted. They may be provincial; we are barbaric. If so, then we must be in some peculiar way offenders. What, then, is the head and front of our offending?

Is it because we came to a new world, and so came to speak differently, held in to old words England forgot, coined new words, necessary words? Even so the Boyles and Brookes and the rest went from England to a new country, Ireland,

and their descendants speak differently; you can tell in a moment they are not Cockneys. But, go further—recall that, till the days of board-schools, a rustic in one part of England and another, a Kentishman, and Yorkshireman, could not understand each other. Where is any trace of this left from the Colonists who came over? No trace of it—there was not enough of it to last. The colonists, gentlefolk and simple, were not peasant-Hodges—they were thinking, reading, writing men and women. Later, of course, differences of speech and usage were certain to grow up here—that was as certain and foreordained as the pulse of the tides or the precession of the Equinixes. We were bound to adopt, or coin new words —words from the Indian, French, the Spanish, as, for example *caucus, succotash, hominy, barbecue, prairee, savannah, canon,* and the like, even though we let our noblest and most distinctive vird pass out all over the world under Oriental names, as *turkey, dindon, Calcütische Hahn.* And we kept old words which England forgot, and old forms, better in many cases than those England preferred. Is it not a most delectible irony, when periodically a horrific Americanism called out a protest in the Times that the great Professor Skeat should have to write wearily, "How often must I point out that in this case the Americans have the better of us." And if, on the other hand, we consider the humor and pith and poetry of rustic speech—recalling quaint and charming phrases heard in Devonshire, or Norfolk, or Scotland—shall we think it merely grotesque that a Cape Codder says a girl's eyes are as "blue as clam-water," or a Connecticuter says "Pooseback," that is "Pappoose-back," for "pig-a-back," or a Kentuckian exclaims, "She came in a June-in'," that is, with the headlong blundering haste of a June-bug.

Not here will the indictment hold and the colonist, or we, have to plead confession and avoidance. To get at the true indictment our kinsmen have against us, we have to take into account a shift in our civilization. The log-cabin of the eastern pioneer is historically as significant as the Norman Keep. The beautiful Colonial manor-house, with or without its wings,

as you go from New England, along the Hudson, into Pennsylvania, to Annapolis, to the South, spells attachment to the old country, old traditions. But the East was not all of this continent, and the strength of heart and brain of the early colonists was not spent or stilled in making homes, finding comfort, in the East. Their descendants in Maine, Pennsylvania, Virginia, North Carolina, poured westward. The boy who ran out with bare feet in zero weather and stood on chips, saved from the night before, to cut the morning's wood, is in his twenties at the frontier. Then follow felled forests, red gashes in the hillside, the long furrow across the prairie, the raw spruce-board shack, the dug-out, the prairie schooner, the jerry-built railroad, the frontier town, the mining-town —heedless disregard of law and order, because of the breathless rush after tomorrow's chance, the headlong excitement— and, with this came talk imcomparably alive, vulgarity, inconceivably picturesque profanity, expectoration. What shall happen to the ancestral speech, the speech of Hengest and Horsa, who would not stay penned-up in the island of Thanet? The sharp nasal pitch of the American voice rises with the angry whine of his buzz-saw, till the blade begins to eat, insistent, contented, into the wood. The continent in part, then in whole, was conquered. What was their speech to these men? It was an edged tool for execration, a plaything for all manner of foolery in off-moments—those lean, keen sailors, lumber-jacks, sawyers, farmers, miners, projectors, drummers, traders, pawns of Providence in the shaping of a continent. For all their rough code of morality, the mass of them were fundamentally decent—to play fair with them was to find them fair, to trust them was to find them trustworthy. And one element in their ultimate creed was love of their country, pride in its privileges, its opportunities. The frontier changed to a settled and orderly condition. Life became easier. The pride remains—here is God's country—but, there is a growing sense of crudeness or rawness, a willingness to be taught. The West looks first to the East, then beyond to the Old World. For social prestige, in pursuit of that elusive thing called culture,

or in a genuine spirit of reverent pilgrimage, the American of the West visits countries beyond the seas. So you see them—father, mother, and the girls, unabashed and brazen, or timid and shrinking, at the European table d'hote; young men, young women, shy spinsters who have saved and spent to visit Oxford, or Stratford, or Carlyle's house. Or, you may meet—how striking a figure—a drummer from Kansas, who had dreamed of Europe from boyhood, on the crest of the Furka, among the snow-clad peaks, striding along toward you over the so-smooth metalled road with its square-coped wall, leagues long, so solid, so un-American, clad in a linen-duster and a silk hat, his cutaway in the pack on his back and his camera strapped on top. He casts an appraising glance at you, "Speak English?" "Yes." "You ain't an American!" "Yes—I hope—I am."

A more stable social order, wider and deeper education, comparison with other countries, do not change the old convictions that here is God's country, here is larger opportunity, here right more readily shapes itself out of wrong, but this raw humanity has become more willing to temper itself in externals into accord with older civilizations. But what effect has this social development left upon our speech? Is it this that has given us the alien speech that Kipling speaks of? The social conditions have been these: a zest of life, because of hard work; free opportunity; rivalry; restlessness and love of change, in the gambling rush for better chances or because a born boss will not stand bossing; sharp-pitched mental alertness; and, flamboyant, spread-eagle patriotism. No alien speech came out of this—but an English shaped by the life, and justifying itself as English, has done for ages past in simplicity, pith, masculine vigor and directness. One point stands out before all, and it goes to the quick of the difference between British English and ours. The English of the pioneer, lumberman, miner, drummer, corruscates with an irresponsible, an extravagant humor. The harder the day's work, the worse its slips and mischances, the more must fun be made out of it. Kipling, our critic, himself a provincial, knew and has

shown how much use of speech for sport might mean to those in the thick of advancing the frontiers of the Empire. Why was he not clever enough to see what it meant to us? The humor of his characters is the humor of men carried from over civilization to where life is stripped bare, and is touched with the taint of the slum and the music-hall. Why could he not understand our native American humor, a thing born of the life that needed it. Perhaps, even to him—as to so many Englishmen—American humor, constantly appearing in disconcerting ways and places, is a fishbone in the throat. Of humor, there is plenty in England. But in England, humor is a matter of class. The so-called lower classes and the upper have never lost the gift of it. Nor is there a lack of true humorists in all classes. The trouble with England is the mass of middle-class persons, who have largely lost a sense of humor through preoccupation with things they think are all of life, their material interests. It almost amounts to a grave defect in English civilization—so many understand only childish puns, clowning, or stupid practical jokes. The unfortunate humorist in England has to be distrustful of his possible audience. But, in America, humor is a natural and national possession; the humorist, professional or amateur, and his audience, are one. The danger with an American is that he may anticipate or better your joke before you come to the point, not that he may need to have it put into italics. He understands all kinds of humor—but, two elements are incomparably his own, extravagance and incongruity. These appear on the surface, but, none but a born American divines the range and interplay beneath them of wit, irony, satire, indirection, hiding and forcing home stark truth. From Colonial times down you may see this tendency in the coining of ridiculous and extravagant terms, *absquatulate, skedaddle, slamwhanger,* and the like. The same thing appears in the uncouth spellings of Artemus Ward and Josh Billings. If our British cousins could take one of them as typically American and the other as holding up to ridicule the actual char-

acteristics of his country, you may judge how blind they can be.

The era of native American humor with its external extravagance and incongruity has not passed away—it remains in our current literature in strange slang, extraordinary ingenious metaphors, sudden and baffling twists and turns of thought and phrase. The real thing still exists in the city street, in the lumber-camp, the ranch, but the fiction writer, like a triumphant rhapsodist, takes the natural article and goes it one better. He methodizes slang, and so comes our commercial short story with its pep and punch, as glittering, as neatly made, as loudly proclaiming that its works are going, as the American tin clock. And, still, elsewhere, anywhere, our wayward humor may turn up unexpectedly—in serious works, editorials, the speeches or interviews of men of weight talking of serious things. And still this baffles and exasperates the heavy middle-class Englishman. He sees this country as a very large fact, with solid securities which he buys—but, what is to be made of this senseless slang, these strange and impossible locutions, this irony, understatement, open foolery, in speaking of things that must be treated seriously?

We may now resolve that apparent contradiction in testimony that perplexed us a moment ago. It was not the condescending solicitude of the expatriate that caused Henry James to find fault with us, or scornful malice on the part of Mr. Kipling. Nor, on the other hand, did Mr. Page let himself be betrayed into playing the boastful American when he praised American English. Nor was it their characteristic thoroughness that caused Continental scholars to take account of the American idiom for what it was worth. When Mr. James blamed our slovenliness and carelessness he was not thinking or speaking of the whole body of the American people any more than, if he were speaking of British English, he would include the rustic with his dialect, the Cockney, or the costermonger. He was speaking of the language of educated and supposedly gentle-bred persons in America, or those accepted as such. He found the speech of these very generally

slovenly and negligent in articulation and diction as compared with similar persons in England, and he was right. And, Mr. Kipling was not thinking of the dialect of the Gloucester fisherman, the Georgia cracker, the Western cow-boy, the negro, in which rather he would truly delight. He was thinking of the gross bulk of our current literature, the facile commonplaceness or factitious cleverness of its diction, its easy tolerant acceptance of ugly neologisms, and, while violent and unfair, he was in part justified, for we are too careless of high standards. But, what of the testimony on the other side? Continental scholars take account of American English because they know we have a prescriptive right to our tradition, and that American English will, whether England likes it or not, exercise a profound influence upon the English of the world. And Mr. Page was thinking and speaking, as an American should, not of one class of our people, but of the whole body of it, of the relative purety of pronunciation and idiom of the people as a whole. In saying what he did he was certainly right. Take a general average and there can be no doubt that as regards errors and vulgarisms, and the desire and ability to speak correctly are concerned, the bulk of the American people speak better than the bulk of the British.

We reach now this point of most vital importance. It is a fact, irrefutable and irrefragible, that the English language is our own, beyond debate or interference, by an inviolable tradition. What does this mean? Ask what it means to England. One million Englishmen are said to rule one-fifth of the population of the world. By armed force, merely? No. Where the Englishman goes, substantial justice and equity go also. Trade and conquest, commodities and markets, may carry the flag, but it is unbought Englishmen, carrying out a tradition of justice and equity, slowly wrought out through centuries, who do the ruling. It is on this that the stability of Great Britain's colonial empire rests and her power to make over alien and intractable races—the English tradition of law and justice and individual freedom. Note the contrast—at the very time that Russia was trying a Jew for

ritual murder, England was raising a Jew to one of the highest offices in the service of the state, that of Lord Chief Justice. Or, note this, that a people against whom England waged only a few years ago an indefensible war are now fighting with her and for her in this war that encircles the globe. It is not merely material interest that holds united her commonwealths and far-flung dependencies—it is that where she takes, she gives, and where she makes subject, she makes free. It is true that England has sinned often and grievously against the ideals of her democracy—but is that not inevitable in the slow shaping of ideals? Those ideals she has never lost—nor has she, in presumptuous arrogance of strength, said, like our enemy, "Evil, be thou my good."

This freedom that England holds and confers is indeed no fanciful thing. What then of this country? Are we not inheritors of the same slowly won and dear-bought tradition, sealed in Magna Charta, sealed in the blood of Charles, grimly confirmed in the tonic though temporary purge of Cromwell's republic, our man of blood and iron. Indeed, more—did we not spring from that very century, go forth to seek and confirm a larger liberty than England could give and finally to enact our own charter of these larger liberties in the Declaration of Independence? If so, what of the language that came to us by like-long tradition? If it is true and in no mystical sense that the thought of the heart and the speech that utters it are one, then English is the language of free men, and the possession of it is itself a step toward liberty. If, also, in its simplicity, directness, masculine vigor and vitality, it is of all languages most easy to learn—if Jacob Grimm could call it a world speech and say that in richness, in intellectual quality, in close economy of expression no living language equals it, "not even our German language itself," then that fact has a meaning that touches our very existence and the persistence of those ideals which we hold dear as Americans. Back in Colonial days, we came fearing and hoping much—English, Scotch, Irish, Huguenot, German, gentle and simple, rich and poor. Others have come, will come, not schooled as

the pioneers were to adventure with serious hearts the responsibilities and danger of a larger liberty—they have come, these later comers, to flee oppression, to make sure of daily bread. Year by year, million by million they have come, and one's heart might well feel a pang of dread to see these myriads huddled squalid in the cars over their bundles or swarming unkempt, unmannered in the street. What can free America do with these? Much she must bear and suffer because of them; no doubt of that, for much of wrong and evil came with them that in obedience to the unpitying and impersonal law of Nature must work itself out. But the issue in their children and their children's children cannot be in doubt, if with this speech of ours they draw in the spirit of liberty and law, a law that shall surely, however slowly, work toward the American ideal of equal justice for all.

To this simple conclusion then we have come. This speech of ours is a symbol not alone or in chief of a sentimental tie to England, our Ally, but because, as it is, truly, our very own, it is a symbol of that long travail of history, our direct and inalienable tradition, which brought freedom to America, to England, to France—in part, indeed, through our example—and to the other democracies of the world. Freedom as yet only in part—the slow experiment of the ages is not yet fulfilled, for America, England, France, and the rest, are as yet imperfect democracies, not yet purged of old wrong or safeguarded against the abuses that may attend free institutions. But that shall yet come, for in democracy and in democracy alone is the hope of the world.

And if, then, looking backward to the past and forward to the future, we ask again that question with which we began —what shall hold fast in this present changing world with its many and complex forces at work behind the shifting face of things—we may abide fast in the faith that it shall be this dearly bought, indomitable, slowly perfected ideal of individual liberty. With democracy at stake, America could not remain America if in the pride of her strength and wealth she failed to play her fullest part. What else could she do than lay aside

her prudent policies and expediencies, wise and right in their time but not now, give, as she is wont to give, fully and generously, reaffirming in this her loyalty to her ancient and precious heritage, absolving in part her debt to those who, in the long succession of time, strove and suffered that she might be free.

THE WAR POETRY OF THE NATION

By Arthur Hobson Quinn

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Nothing is so hard to define as poetry, but I believe that William Watson has indicated its essential quality, when, in describing the poetry of Robert Burns, he said:

"Right from the heart, right to the heart it sprang."

Nowhere must the appeal be so quick as in the poetry of war, nowhere is the note of sincerity more essential.

War poetry appears in three forms, first, that which is wrung out of the triumph or the agony of conflict, or its immediate effects; second, that which is reminiscent but is written by those who were actually in the struggle; and, third, that written long afterwards by non-participants. Owing to limitation of time, we cannot concern ourselves this afternoon with the third class. It seems hard to omit from our discussion such stirring poems as Oliver Wendell Holmes' "Lexington," Wallace Rice's "Defeat and Victory," or James Jeffrey Roche's "Fight of the Armstrong Privateer," but, great as this reminiscent poetry is in bulk and fine as certain of its specimens are in quality, the most interesting war poetry is that written by those who lived and suffered amid the scenes they describe.

Our first national war poetry began, of course, with the Revolution. Much of this was anonymous, and the amount of verse which the struggle for liberty engendered remains unknown except to those who have searched through the newspapers of the time. Recent investigation of the newspapers of Massachusetts alone showed over three hundred pieces of verse which had never been reprinted in anthologies, or otherwise made available.

The lines of this revolutionary poetry are not always smooth,

but the spirit of independence is there. As the author of the "Pennsylvania Song" (1775) says:

> "We are the troop that never will stoop
> To wretched slavery!"

Out of the beginnings of the conflict come such poems as "Free America," attributed to General Joseph Warren, ending:

> Some future day shall crown us
> The masters of the main,
> Our fleets shall speak in thunder
> To England, France and Spain;
> And the nations over the ocean spread
> Shall tremble and obey
> The sons, the sons, the sons, the sons
> Of brave America!

The Declaration of Independence brought forth quite a number of poems, the best being the "Camp Ballad," by Francis Hopkinson, of the class of 1757, the first student to matriculate in the College of Philadelphia. The same year, 1776, produced the effective anonymous ballad of "Nathan Hale," beginning:

> The breezes went steadily thro' the tall pines,
> A saying "oh, Hush!" a saying "oh, Hush!"
> As stilly stole by a bold legion of horse
> For Hale in the bush! for Hale in the bush!

The great mass of war poetry of the Revolution was satirical, and it served an important function. The greatest asset the British army had at the outset of the war was its reputation for professional skill. How could the colonial militia dare to stand up before these regulars? So argued the militia themselves at times. But when Francis Hopkinson, of Pennsylvania, Philip Freneau, of Princeton, and John Trumbull, of Yale, had poured out their satire upon the British troops, had made them ridiculous in "The Battle of the Kegs," "Lord Dunmore's Petition," or "McFingal," the awe in which the armies of Great Britain had been held was dissipated. Men are not afraid of that at which they laugh.

Freneau wrote often, too, of the sea-fights which were

winning laurels for the infant navy. His poem "On the Death of Captain Nicholas Biddle" tells the story of the gallant fight of the "Randolph" against a ship of twice her size; but for vigor of verse some of the anonymous poems, like "The Yankee Privateer," have even more stirring an appeal.

After the Revolution there was a lull in martial poetry until the troubles with France and England began to become insistent in 1798. Robert Treat Paine's "Adams and Liberty" sounded the appeal for the freedom of the seas, which, in view of the submarine, has a modern application in its second stanza:

> In a clime whose rich vales feed the marts of the world,
> Whose shores are unshaken by Europe's commotion,
> The trident of commerce should never be hurl'd,
> To incense the legitimate powers of the ocean.
> But should pirates invade,
> Though in thunder array'd,
> Let your cannon declare the free charter of trade.
> For ne'er shall the sons of Columbia be slaves,
> While the earth bears a plant, or the sea rolls its waves.

Still more popular was "Hail Columbia," written by Joseph Hopkinson of the Class of 1786, a son of Francis Hopkinson. This was first sung at the Chestnut Street Theatre in Philadelphia, in May, 1798. It is the only one of our great national songs of which the words and music are both native.

The trouble with France was averted, but the encroachments of England upon our commerce became unbearable. As an unknown author of the time aptly says:

> Farewell, Peace! Another crisis
> Calls us to "the last appeal"
> Made when monarchs and their vices
> Leave no argument but steel!

The triumphs of the navy were celebrated in song and drama. Especially popular were the victories of the Constitution over the Guerrière, on August 19, 1812, Perry's victory on Lake Erie and MacDonough's triumph on Lake Champlain. Freneau's "On the Capture of the Guerrière," the

anonymous "Yankee Thunders," "Perry's Victory" and "The Battle of Valparaiso" are all distinctly worth while.

Jackson's victory at New Orleans brought forth such stirring lyrics as Joesph Rodman Drake's "To the Defenders of New Orleans," but above the rest of the poetry inspired by the War of 1812 rises "The Star-Spangled Banner." Its author, Francis Scott Key, had gone to the ship of the British Admiral on September 13th, 1814, to arrange an exchange of prisoners and was detained till the battle should be over. He watched the fight while the inspiration came which led him to write our national hymn. "The Star-Spangled Banner" has never received its due appraisement as poetry, but for imaginative power, unity of construction and distinction of phrasing it is a poem of which we may well be proud and which it behooves us to know better. What does it speak for our national consciousness when we sing only the first stanza, stumble over the second, apologize for the third, and omit altogether such a stanza as

> O! thus be it ever, when freemen shall stand
> Between their loved homes and the war's desolation!
> Blest with victory and peace, may the heaven rescued land
> Praise the Power that hath made and preserved us a nation.
>
> Then conquer we must, for our cause it is just,
> And this be our motto: "In God is our trust."
> And the star-spangled banner in triumph shall wave
> O'er the land of the free and the home of the brave.

From the point of view of pure literary merit, the best poetry centering about the Mexican War was written in opposition to it. Whittier's "Texas" and Lowell's "The Biglow Papers" were pacifist poems. I have heard them quoted as arguments for present day pacificism, but the argument is a false one. *Then* there was room for difference of opinion, for Texas meant the extension of slavery. Today the pacifist strikes at freedom. If James Russell Lowell or John G. Whittier were alive today they would speak, not in the terms they used in 1845, but in the terms they used in 1865.

Among the best of the war poetry of that time is Charles Fenno Hoffman's "Monterey," of which the first stanza must suffice:

We were not many, we who stood
Before the iron sleet that day:
Yet many a gallant spirit would
Give half his years if but he could
Have been with us at Monterey.

Albert Pike's "Buena Vista" has ringing lines and one of the very best war poems in the English language commemorates this same battle. That is "The Bivouac of the Dead" written in 1847 by Captain Theodore O'Hara, who had himself fought for his country and been wounded at Cherubusco:

The muffled drum's sad roll has beat
The soldier's last tattoo;
No more on life's parade shall meet
The brave and daring few.
On Fame's eternal camping-ground
Their silent tents are spread,
And Glory guards with solemn round
The bivouac of the dead.

Their shivered swords are red with rust,
Their plumed heads are bowed;
Their haughty banner trailed in dust
Is now their martial shroud,
And plenteous funeral tears have washed
The red stains from each brow,
And their proud forms in battle gashed
Are free from anguish now.

Our greatest war poetry arose, of course, from the Civil War. There is no better way of understanding the causes of that war and the spirit with which the North and the South fought through the conflict than to follow the poetry of both sides. In December, 1860, South Carolina seceded and in February, 1861, the Confederacy was established. In January, Holmes had read his "Voice of the Loyal North" at his class dinner at Harvard, but while it has stirring lines, it

is not the equal of Henry Timrod's magnificent ode, "Ethnogenesis" in which he pictured the South embarked on a crusade for self-government.

April 12, 1861, the first gun was fired at Fort Sumter. A great deal of verse was in consequence, written on both sides, the best being Edmund Clarence Stedman's "Sumter," and Albert Pike's "Dixie."

In response to Lincoln's call for 75,000 men the Second Massachusetts Regiment on its way through Baltimore was attacked by a mob and blood was shed on April 19, the anniversary of the Battle of Lexington. This caused James Ryder Randall, a professor of English Literature, teaching in Louisiana, to write "Maryland, My Maryland" at a single sitting, April 23, 1861. It was set to music by Miss Jennie Cary, of Baltimore, and sung for the first time to the soldiers under Beauregard at Fairfax Court House. The song spread like wild fire through the South. Two stanzas will illustrate the essentially characteristic note of this greatest of the Southern war songs. It is the appeal of local feeling, of State to State, that rings out in such lines as

Dear Mother, burst the tyrant's chain,
  Maryland!
Virginia should not call in vain,
  Maryland!
She meets her sisters on the plain,—
"Sic semper!" 'tis the proud refrain,
That baffles minions back amain,
  Maryland!
Arise in majesty again,
  Maryland, my Maryland!

Come! for thy shield is bright and strong,
  Maryland!
Come! for thy dalliance does thee wrong,
  Maryland!
Come to thine own heroic throng
Stalking with Liberty along,
And chant thy dauntless slogan-song,
  Maryland, my Maryland!

I see the blush upon thy cheek,
  Maryland!
For thou wast ever bravely meek,
  Maryland!
But, lo! there surges forth a shriek,
From hill to hill, from creek to creek,
Potomac calls to Chesapeake,
  Maryland, my Maryland!

The best way to vizualize the Civil War is to picture the two armies facing each other at different points along a long line stretching from Fortress Monroe in Virginia, running through Chesapeake Bay and the Potomac River to the mountains, then across Western Virginia and through Kentucky, Missouri and Indiana Territory to New Mexico. The war may be epitomized as an effort on the Union side to drive back that line.

At the beginnng, General McDowell was fronting General Beauregard in Virginia and public opinion at the North forced a premature attack. The result was Bull Run. Naturally there was more verse on the Southern side than upon the Northern. Two poems of decided merit "The Virginians of the Valley" and "Our Left," both by Francis Orray Ticknor, of Georgia ('43 Med.), arise from this battle. The discontent of the North showed in such a popular poem as "All Quiet Along the Potomac To-night," by Ethel L. Beers, and Holmes' stinging verses "The Sweet Little Man—dedicated to the Stay at Home Rangers."

Lowell began his second series of the Biglow Papers, and in February, 1862, appeared the biting satire "Jonathan to John," voicing the indignation of the nation against the action of England in the Trent affair. It is too long to read entire, but a few stanzas will show its quality:

It don't seem hardly right, John,
  When both my hands was full,
To stump me to a fight, John,—
  Your cousin, tu, John Bull!
  Ole Uncle S. sez he, "I guess
  We know it now," sez he,

"The Lion's paw is all the law,
  According to J. B.,
  Thet's fit for you an' me!"

We own the ocean, tu, John:
  You mus'n take it hard,
Ef we can't think with you, John,
  It's jest your own backyard.
  Ole Uncle S. sez he, "I guess
  Ef thet's his claim," sez he,
"The fencin-stuff'll cost enough
  To bust up friend J. B.,
  Ez wal ez you an' me!"

We give the critters back, John,
  Cos Abraham thought 't was right;
It warn't your bullyin' clack, John,
  Provokin' us to fight
  Ole Uncle S. sez he, "I guess
  We've a hard row," sez he,
"To hoe jest now; but thet, somehow,
  May happen to J. B.,
  Ez wal ez you an' me!"

Shall it be love or hate, John?
  It's you thet's to decide;
Ain't your bonds held by Fate, John,
  Like all the world's beside?
  Ole Uncle S. sez he, "I guess
  Wise men forgive," sez he,
"But not forgit; an' some time yit
  That truth may strike J. B.,
  Ez wal ez you an' me!"

God means to make this land, John,
  Clear thru from sea to sea,
Believe an' understand, John,
  The wuth o' bein' free.
  Ole Uncle S. sez he, "I guess
  God's price is high," sez he;
"But nothin' else than wut he sells
  Wears long, an' thet J. B.
  May larn, like you an' me!

In the same issue of the *Atlantic Monthly* the front page bore under the flag which appeared on that page every month, throughout the war, Mrs. Howe's "Battle Hymn of the Republic," one of the greatest literary heritages of the conflict. It came to her at midnight and she rose and wrote it down. In the morning, before looking at the verses she tried to remember them, and they had disappeared entirely from her memory. I regret to say that attempts have been made to fit the words to other music than the original strains which belong by eminent fitness to them. Incredible as it may seem, persons have even had the temerity from time to time to attempt to substitute other words. As Mrs. Howe revised it and as I once heard her recite it, a little old lady, with a face transfigured with the memories of those great days, it reads:

Mine eyes have seen the glory of the coming of the Lord:
He is trampling out the vintage where the grapes of wrath are stored;
He hath loosed the fateful lightning of His terrible swift sword:
His truth is marching on.

I have seen Him in the watch-fires of a hundred circling camps;
They have builded Him an altar in the evening dews and damps;
I can read His righteous sentence by the dim and flaring lamps.
His day is marching on.

I have read a fiery gospel, writ in burnished rows of steel:
"As ye deal with my contemners, so with you my grace shall deal;
Let the Hero, born of woman, crush the serpent with his heel,
Since God is marching on."

He has sounded forth the trumpet that shall never call retreat;
He is sifting out the hearts of men before His judgment-seat:
Oh! be swift, my soul, to answer Him! be jubilant, my feet!
Our God is marching on.

In the beauty of the lilies Christ was born across the sea,
With a glory in His bosom that transfigures you and me:
As He died to make men holy, let us die to make men free,
While God is marching on!

Meantime the country was urging McClellan to advance, and he attacked Richmond, although the government, panic stricken by the fear of Stonewall Jackson, prevented his success by withdrawing his support. Lincoln called for more troops, and in response appeared in the *New York Evening Post* for July 16, 1862, John Gibbons' stirring verses:

We are coming, Father Abraham, three hundred thousand more,
From Mississippi's winding stream and from New England's shore;
We leave our ploughs and workshops, our wives and children dear,
With hearts too full for utterance, with but a silent tear;
We dare not look behind us but steadfastly before:
We are coming, Father Abraham, three hundred thousand more!

If you look across the hill-tops that meet the northern sky,
Long moving lines of rising dust your vision may descry;
And now the wind, an instant, tears the cloudy veil aside,
And floats aloft our spangled flag in glory and in pride,
And bayonets in the sunlight gleam, and bands brave music pour:
We are coming, Father Abraham, three hundred thousand more!

If you look all up our valleys where the growing harvests shine,
You may see our sturdy farmer boys fast forming into line;
And children from their mother's knees are pulling at the weeds,
And learning how to reap and sow against their country's needs;
And a farewell group stands weeping at every cottage door;
We are coming, Father Abraham, three hundred thousand more!

You have called us, and we're coming, by Richmond's bloody tide,
To lay us down for Freedom's sake, our brothers' bones beside,
Or from foul treason's savage grasp to wrench the murderous blade,
And in the face of foreign foes its fragments to parade.
Six hundred thousand loyal men and true have gone before:
We are coming, Father Abraham, three hundred thousand more!

Pope was placed in charge of the army and was defeated, the exquisite "Dirge for a Soldier," by George Boker, being prompted by the death of General Kearney in this campaign. McClellan was restored and the desire of the North for more decided action is reflected in Stedman's ringing verses, "Wanted, a Man!"

Back from the trebly crimsoned field
  Terrible words are thunder-tost;
Full of the wrath that will not yield,
  Full of revenge for battles lost!
  Hark to their echo as it crost
The Capitol, making faces wan:
  "End this murderous holocaust;
  Abraham Lincoln, give us a MAN!"

These were written just nine days before McClellan defeated Lee at Antietam. Whittier's "Barbara Frietchie" was inspired by the same campaign.

Meantime the Union Navy was trying to blockade the coast. Their approach caused Timrod to write "Carolina":

The despot treads thy sacred sands,
Thy pines give shelter to his bands,
Thy sons stand by with idle hands,
    Carolina!
He breathes at ease thy airs of balm,
He scorns the lances of they palm;
Oh! who shall break thy craven calm,
    Carolina!
Thy ancient fame is growing dim,
A spot is on thy garment's rim;
Give to the winds thy battle-hymn,
    Carolina!

In the West the armies under Grant and Rosecrans were driving the Confederates back through Kentucky, Tennessee, and Arkansas, turning the left of the Confederate line. While the upper Mississippi was being opened, Farragut attacked the forts on the lower river and captured New Orleans, April, 1862. Henry Howard Brownell celebrated this victory with "The River Fight" which brought him a commission with Farragut, and Ticknor's "The River" reveals effectively the Southern feeling.

Hold to the giant river,
  Ye, with a giant claim!
Yours from the great All-Giver,
  Yours in Jehovah's name!

By fireside, field and altar,
By temple, by grove, by grave,
By the smiles and tears
Of a hundred years,
By the lifetime toil of your pioneers
And the life-blood of your braves.

On January 1, 1863, Lincoln issued the Emancipation Proclamation. Emerson's "Boston Hymn" was the most notable utterance inspired by this action. During Hooker's campaign and his defeat at Chancellorsville, the most important verse was prompted by the death of General Stonewall Jackson, and best of it all is an anonymous poem, "The Brigade Must Not Know, Sir"! The attack on Charleston produced Timrod's fine poem "Charleston":

Calm as that second summer which precedes
The first fall of the snow,
In the broad sunlight of heroic deeds,
The city bides the foe.

As yet, behind their ramparts stern and proud,
Her bolted thunders sleep—
Dark Sumter, like a battlemented cloud;
Looms o'er the solemn deep.

No Calpe frowns from lofty cliff or scaur
To guard the holy strand;
But Moultrie holds in leash her dogs of war
Above the level sand.

And down the dunes a thousand guns lie couched,
Unseen, beside the flood,—
Like tigers in some Orient jungle crouched,
That wait and watch for blood.

The charge on Fort Wagner under Colonel Robert Gould Shaw at the head of the Fifty-fourth Massachusetts, composed of negro troops, in which Col. Shaw was killed has inspired many poems, then and since. Brownell and Lowell wrote at the time, and Aldrich and Moody many years afterwards.

Lee invaded Pennslvania, Meade faced him at Gettysburg and the greatest battle of the war was fought. Bayard Taylor's "Gettysburg Ode," Bret Harte's "John Burns of Gettysburg" are the best of the contemporary verse inspired by this conflict. The greatest poem, however, was written twenty-five years afterwards by a Confederate soldier, William H. Thompson in "The High Tide at Gettysburg":

A cloud possessed the hollow field,
The gathering battle's smoky shield:
  Athwart the gloom the lightning flashed,
  And through the cloud some horsemen dashed,
And from the heights the thunder pealed.

Then, at the brief command of Lee,
Moved out that matchless infantry,
  With Pickett leading grandly down,
  To rush against the roaring crown
Of those dread heights of destiny.

Far heard above the angry guns,
A cry of tumult runs:
  The voice that rang through Shiloh's woods,
  And chickamauga's solitudes:
The fierce South cheering on her sons!

Ah, how the withering tempest blew
Against the front of Pettigrew!
  A Khamsin wind that scorched and singed
  Like that infernal flame that fringed
The British squares at Waterloo!

A thousand fell where Kemper led;
A thousand died where Garnett bled;
  In blinding flame and strangling smoke,
  The remnant through the batteries broke,
And crossed the works with Armistead.

"Once more in Glory's van with me!"
Virginia cried to Tennessee:
  "We two together, come what may,
  Shall stand upon those works today!"
The reddest day in history.

Brave Tennesse! In reckless way
Virginia heard her comrade say:
"Close 'round this rent and riddled rag!"
What time she set her battle flag
Amid the guns of Doubleday.

But who shall break the guards that wait
Before the awful face of Fate?
The tattered standards of the South
Were shrivelled at the cannon's mouth,
And all her hopes were desolate.

In vain the Tennesseean set
His breast against the bayonet;
In vain Virginia charged and raged,
A tigress in her wrath uncaged,
Till all the hill was red and wet!

Above the bayonets, mixed and crossed,
Men saw a gray, gigantic ghost
Receding through the battle-cloud,
And heard across the tempest loud
The death-cry of a nation lost!

The brave went down! Without disgrace
They leaped to Ruin's red embrace;
They only heard Fame's thunders 'wake
And saw the dazzling sunburst break
In smiles on Glory's bloody face!

They fell, who lifted up a hand
And bade the sun in heaven to stand;
They smote and fell, who set the bars
Against the progress of the stars,
And stayed the march of Motherland.

They stood, who saw the future come
On through the fight's delirium;
They smote and stood, who held the hope
Of nations on that slippery slope,
Amid the cheers of Christendom!

God lives! He forged the iron will,
That clutched and held that trembling hill!
  God lives and reigns! He built and lent
  The heights for Freedom's battlement,
Where floats her flag in triumph still!

Fold up the banners! Smelt the guns!
Love rules. Her gentler purpose runs.
  A mighty mother turns in tears,
  The pages of her battle years,
Lamenting all her fallen sons!

In the West, Grant captured Vicksburg, July 4, 1863, and Port Hudson fell, opening the Mississippi. Haynes' "Vicksburg" and Boker's "Black Regiment" are the best of the verse inspired by this campaign. Two notable poems were occasioned by the Chickamaugua campaign. On the Union side the appealing verses "The Flag's Come Back to Tennessee" reveal the delight of the old soldier who had fought for the Stars and Stripes and had seen it banished from his State. One of the most touching poems on the Southern side was written by Dr. Ticknor, based upon a real incident. Mrs. Ticknor had nursed a boy named Giffen, the son of a blacksmith, had saved his life and taught him to write:

LITTLE GIFFEN

Out of the focal and foremost fire,
Out of the hospital walls as dire,
Smitten of grape-shot and gangrene
(Eighteenth battle and he sixteen)—
Spectre such as you seldom see,
Little Giffen of Tennessee.

"Take him—and welcome!" the surgeons said,
"Little the doctor can help the dead!"
So we took him and brought him where
The balm was sweet on the summer air;
And we laid him down on a wholesome bed—
Utter Lazarus, heel to head!

And we watched the war with bated breath—
Skeleton Boy against skeleton Death.
Months of torture, how many such!
Weary weeks of the stick and crutch;
And still a glint in the steel-blue eye
Told of a spirit that wouldn't die.

And didn't. Nay, more! in death's despite
The crippled skeleton learned to write.
"Dear mother," at first, of course; and then
"Dear Captain," inquiring about "the men,"
Captain's answer: "Of eighty and five,
Giffen and I are left alive."

Word of gloom from the war one day:
"Johnston's pressed at the front," they say!
Little Giffen was up and away;
A tear—his first—as he bade good-bye,
Dimmed the glint of his steel-blue eye.
"I'll write, if spared!" There was news of the fight
But none of Giflen—he did not write.

I sometimes fancy that, were I king
Of the princely knights of the Golden Ring,
With the song of the minstrel in mine ear,
And the tender legend that trembles here,
I'd give the best, on his bended knee,
The whitest soul of my chivalry,
For Little Giffen of Tennessee.

Sherman's march to the sea produced "Marching Through Georgia" by H. C. Work, Holmes' "Sherman's in Savannah" and Hayne's "Charleston." Grant's campaign against Richmond led to the writing of "Sheridan's Ride" by Thomas Buchanan Read, and Farragut's campaign in Mobile Bay was the occasion for one of the best of our war poems, Brownell's "The Bay Fight." Here we have reflected that intense pride in the victorious record of the Navy that remains one of the most characteristic notes in our war poetry. Captain Craven on the Tecumseh, had been sunk at the head of the line, the next ship had signaled "Torpedoes" and Farragut

had made his famous reply and had led the attack on the Hartford. A few stanzas will suffice to show the quality of this poem:

Fear? A forgotten form!
Death? A dream of the eyes!
We were atoms in God's great storm
That roared in the angry skies.

One only doubt was ours,
One only dread we knew,—
Could the day that dawned so well
Go down for the Darker Powers?
Would the fleet get through?
And ever the shot and shell
Came with the howl of hell,
The splinter-clouds rose and fell,
And the long line of corpses grew,—
Would the fleet win through?

There are men that never will fail
(How aforetimes they've fought!)
But Murder may yet prevail,—
They may sink as Craven sank.
Therewith one hard, fierce thought,
Burning on heart and lip,
Ran like fire through the ship;
Fight her, to the last plank!

A dimmer renown might strike
If Death lay square alongside,—
But the old Flag has no like,
She must fight whatever betide,—
When the war is a tale of old
And this day's story is told,
They shall hear how the Hartford died!

During the end of 1864 and the beginning of 1865 appear the lyrics of regret for loss of husbands, lovers and sons that would not come back. These are hard to write well. Some of the best of them are J. G. Holland's "The Heart of the War," William Winter's "After All" and Kate Putnam Osgood's "Driving Home the Cows":

Out of the clover and blue-eyed grass,
He turned them into the river-lane;
One after another he let them pass,
Then fastened the meadow-bars again.

Under the willows, and over the hill,
He patiently followed their sober pace;
The merry whistle for once was still,
And something shadowed the sunny face.

Only a boy! and his father had said
He never could let his youngest go;
Two already were lying dead
Under the feet of the trampling foe.

But after the evening work was done,
And the frogs were loud in the meadow-swamp,
Over his shoulder he slung his gun,
And stealthily followed the foot-path damp.

Across the clover, and through the wheat,
With resolute heart and purpose grim,
Though cold was the dew on his hurrying feet,
And the blind bat's flitting startled him.

Thrice since then had the lanes been white,
And the orchards sweet with apple-bloom;
And now, when the cows came back at night,
The feeble father drove them home.

For news had come to the lonely farm
That three were lying where two had lain;
And the old man's tremulous, palsied arm
Could never lean on a son's again.

The summer day grew cold and late.
He went for the cows when the work was done;
But down the lane, as he opened the gate,
He saw them coming, one by one,—

Brindle, Ebony, Speckle, and Bess,
Shaking their horns in the evening wind;
Cropping the buttercups out of the grass,—
But who was it following close behind?

Loosley swung in the idle air
  The empty sleeve of army blue;
And worn and pale, from the crisping hair,
  Looked out a face that the father knew.

For Southern prisons will sometimes yawn,
  And yield their dead unto life again;
And the day that comes with a cloudy dawn
  In golden glory at last may wane.

The great tears sprang to their meeting eyes;
  For the heart must speak when the lips are dumb;
And under the silent evening skies,
  Together they followed the cattle home.

On April 9, 1865, Lee surrendered and soon the war was over. The northern war poetry continues to reflect the regret of our losses, in such poems as Lowell's "Mr. Hosea Biglow to the Editor of the Atlantic Monthly" and the beautiful memorial verses of Holmes "To John and Robert Ware." Aldrich's "Spring in New England" belongs by right here also. On the Southern side, Hayne's Odes, Father Ryan's "The Conquered Banner," Timrod's "Ode Sung at Magnolia Cemetery" and Mrs. Preston's "Virginia Capta" represent the devotion to a lost cause.

The assassination of Lincoln produced a quantity of verse. The best is Brownell's "Abraham Lincoln" in October, 1865, beginning:

Dead is the roll of the drums,
  And the distant thunders die,
  They fade in the far-off sky;
And a lovely summer comes,
  Like the smile of Him on high.

Lulled the storm and the onset,
  Earth lies in a sunny swoon;
  Stiller splendor of noon,
Softer glory of sunset,
  Milder starlight and moon!

For the kindly Seasons love us;
  They smile over trench and clod,
(Where we left the bravest of us,)
  There's a brighter green of the sod,
And a holier calm above us
  In the blessed blue of God.

The roar and ravage were vain
  And Nature, that never yields,
Is busy with sun and rain
  At her old sweet work again.
On the lonely battlefields.

Mrs. Howe's "Pardon," Weir Mitchell's Sonnet on Lincoln, and Whitman's "Captain, My Captain" and his "Memorials of President Lincoln" are good, but all pale before Lowell's "Harvard Commemoration Ode," read July 4, 1865, which is the crowning achievement of our war poetry. The poem must be read in its entirety to be appreciated fully. As one of our keenest critics has well said: "We can front the world with this."

Some of the most timely poetic verses belong to no special campaign. Ticknor's "Virginia," or his fine poem "Loyal," Timrod's "Christmas" and "Spring" are included in this group. Nora Perry's charming verses "Riding Down" belong generally to the time of the return of the troops. Among the poems written immediately after the war and expressing ideas of reconciliation is Francis Miles Finch's "The Blue and the Gray," written to celebrate the generous placing of flowers on the graves of Northern soldiers by Southern hands.

By the flow of the inland river,
  Whence the fleets of iron have fled,
Where the blades of the grave-grass quiver,
  Asleep are the ranks of the dead:
  Under the sod and the dew,
    Waiting the judgment-day;
  Under the one, the Blue,
    Under the other, the Gray.

These in the robings of glory,
  Those in the gloom of defeat,
All with the battle-blood gory,
  In the dusk of eternity meet:
  Under the sod and the dew,
    Waiting the judgment-day;
  Under the laurel, the Blue,
    Under the willow, the Gray.

From the silence of sorrowful hours
  The desolate mourners go,
Lovingly laden with flowers
  Alike for the friend and the foe:
  Under the sod and the dew,
    Waiting the judgment-day;
  Under the roses, the Blue,
    Under the lilies, the Gray.

So with an equal splendor,
  The morning sun-rays fall,
With a touch impartially tender,
    On the blossoms blooming for all;
  Under the sod and the dew,
    Waiting the judgment-day;
  Broidered with gold, the Blue,
    Mellowed with gold, the Gray.

So, when the summer calleth,
  On forest and field of grain,
With an equal murmur falleth
  The cooling drip of the rain:
  Under the sod and the dew,
    Waiting the judgment-day;
  Wet with the rain, the Blue,
    Wet with the rain, the Gray.

Sadly, but not with upbraiding,
  The generous deed was done,
In the storm of the years that are fading
  No braver battle was won:
  Under the sod and the dew,
    Waiting the judgment-day;
  Under the blossoms, the Blue,
    Under the garlands, the Gray.

No more shall the war-cry sever,
Or the winding rivers be red;
They banish our anger forever
When they laurel the graves of our dead!
Under the sod and the dew,
Waiting the judgment-day;
Love and tears for the Blue,
Tears and love for the Gray.

Some of the songs of the Civil War have already been mentioned. "John Brown's Body," the final version of which was by Charles S. Hall, has a certain elemental quality which has given it even an international reputation. The political history of Septimus Winner's "Give Us Back Our Old Commander," written originally with reference to McClellan and used long afterward in Grant's behalf, makes it, too, of more than passing interest.

On the Southern side, Randall's "There's Life in the Old Land Yet," and Mrs. Ketchum's "The Bonnie Blue Flag" were second of course to "Dixie" and "Maryland."

Considering the Civil War Poetry in general, we notice on the Southern side the "Come to War" note more frequently than on the Union side. Randall, Timrod, Lanier, Ticknor, Hayne, had all volunteered in the armies of the South, which was not generally the case with the Northern writers. There was a note of personal devotion to the Southern leaders, Lee, Jackson, Beauregard, Ashby, Pelham, and others which was not shown so often to the Union commanders, outside of McClellan and Sheridan. After Lincoln's death, of course, this personal note is often struck. There is an intense State and local pride reflected in the Southern poetry. On the Northern side this is paralleled by an equally strong celebration of more abstract emotions, the love of the flag and of freedom, and the pride of a victorious past.

Since the Civil War, at the present time there has been no great occasion for war poetry. The Spanish War was the signal for much verse writing, but no really great poetry sprang from direct celebration of the conflict. There is some

fire in Richard Hovey's "Battle of Manila," in James Lindsay Gordon's "Wheeler at Santiago," in Wallace Rice's "The Brooklyn at Santiago." But the greatest poem by far caused by the war was William Vaughan Moody's "Ode in Time of Hesitation." It was inspired by the statue of Col. Robert Shaw in Boston, killed at Fort Wagner, in 1863, and it protested against the taking of the Philippines. The ending is especially fine.

> Ah, no!
> We have not fallen, so.
> We are our fathers' sons: let those who lead us know;
> 'Twas only yesterday sick Cuba's cry
> Came up the tropic wind, "Now help us, for we die!"
> Then Alabama heard,
> And rising, pale, to Maine to Idaho
> Shouted a burning word;
> Proud state with proud impassioned state conferred
> And at the lifting of a hand sprang forth,
> East, west, and south, and north,
> Beautiful armies. Oh, by the sweet blood and young
> Shed on the awful hill slope at San Juan,
> By the unforgotten names of eager boys
> Who might have tasted girls' love and been stung
> With the old mystic joys
> And starry griefs, now the spring nights come on,
> But that the heart of youth is generous,—
> We charge you, ye who lead us,
> Breathe on their chivalry no hint of stain!
> Turn not their new-world victories to gain!
> One least leaf plucked for chaffer from the bays
> Of their dear praise,
> One jot of their pure conquest put to hire,
> The implacable republic will require.

Before the time had come for the nation herself to enter the present war, her poets were in it. On July 4, 1916, Alan Seeger fell fighting with the Foreign-Legion at Belloy-en-Santerre in France. Perhaps it was the fact of his supreme sacrifice that makes his verses rise out of the mass of war poetry that the years 1914-17 produced, but surely there is a

quality of greatness in his poem "Champagne 1914-15, "or in these verses:

I have a rendezvous with Death
At some disputed barricade,
When Spring comes back with rustling shade
And apple-blossoms fill the air—
I have a rendezvous with Death
When Spring brings back blue days and fair.

It may be he shall take my hand
And lead me into his dark land
And close my eyes and quench my breath—
It may be I shall pass him still.
I have a rendezvous with Death
On some scarred slope of battered hill,
When Spring comes round again this year
And the first meadow-flowers appear.

God knows, 't were better to be deep
Pillowed in silk and scented down,
Where Love throbs out in blissful sleep
Pulse nigh to pulse, and breath to breath,
Where hushed awakenings are dear * * *
But I've a rendezvous with Death
At midnight in some flaming town,
When Spring trips north again this year,
And I to my pledged word am true,
I shall not fail that rendezvous.

The themes that appealed most strongly at first to our contemporary verse writers were the heroism of Belgium and the shining spirit of France. This appreciation is shown in most distinuished form in Mr. Dana Burnett's "The Battle of Liège," in Mr. Henry VanDyke's "The Name of France!" and in Mrs. Theodosia Garrison's "The Soul of Jeanne D'Arc":

THE NAME OF FRANCE

"Give us a name to fill the mind
With the shining thoughts that lead mankind,
The glory of learning, the joy of art,—
A name that tells of a splendid part

In the long, long toil and the strenuous fight
Of the human race to win its way
From the feudal darkness into the day
Of Freedom, Brotherhood, Equal Right,—
A name like a star, a name of light.
I give you France!

Give us a name to stir the blood
With a warmer glow and a swifter flood,—
A name like the sound of a trumpet, clear,
And silver-sweet, and iron-strong,
That calls three million men to their feet,
Ready to march, and steady to meet
The foes who threaten that name with wrong,—
A name that rings like a battle-song.
I give you France!

Give us a name to move the heart
With the strength that noble griefs impart,
A name that speaks of the blood outpoured
To save mankind from the sway of the sword,—
A name that calls on the world to share
In the burden of sacrificial strife
Where the cause at stake is the world's free life
And the rule of the people everywhere,—
A name like a vow, a name like a prayer.
I give you France!

THE SOUL OF JEANNE D'ARC

She came not into the presence as a martyred saint might come,
Crowned, white-robed and adoring with very reverence dumb,
She stood as a straight young soldier, confident, gallant, strong,
Who asks a boon of his captain in the sudden hush of the drum.

She said "Now have I stayed too long in this my place of bliss,
With these glad dead that, comforted forget what sorrow is
Upon that world whose stony stairs they climbed to come to this.

But lo, a cry hath torn the peace wherein so long I stayed,
Like a trumpet's call at Heaven's wall from a herald unafraid,—
A million voices in one cry, "Where is the Maid, the Maid?"

"Grant that I may answer this my call; yea, though the end may be
The naked shame, the biting flame, the last, long agony;
I would go singing down that road where fagots wait for me.

"Mine be the fires about my feet, the smoke above my head;
So might I glow, a torch to show the path my heroes tread;
My Captain! Oh, my Captain, let me go back!" she said.

The note of sympathy with the wounded in Mr. Robert Haven Schauffler's "The White Comrade" and in Mr. Robert Frost's "Not to Keep" is very appealing, and there is a national consciousness as well as effectiveness of phrasing in Mr. Vachel Lindsay's "Abraham Lincoln Walks at Midnight":

It is portentous, and a thing of state
That here at midnight, in our little town,
A mourning figure walks, and will not rest,
Near the old court-house pacing up and down.

Or by his homestead, or in shadowed yards
He lingers where his children used to play;
Or through the market, on the well-worn stones
He stalks until the dawn-stars burn away.

A bronzed, lank man! His suit of ancient black;
A famous high top-hat and plain worn shawl
Make him the quaint great figure that men love
The prairie-lawyer, master of us all.

He cannot sleep upon his hillside now.
He is among us:—as in times before!
And we who toss and lie awake for long
Breathe deep, and start, to see him pass the door.

His head is bowed. He thinks on men and kings.
Yea, when the sick world cries, how can he sleep?
Too many peasants fight, they know not why,
Too many homesteads in black terror weep.

The sins of all the war-lords burn his heart.
He sees the dreadnaughts scouring every main.
He carries on his shawl-wrapped shoulders now
The bitterness, the folly and the pain.

He cannot rest until a spirit-dawn
Shall come;—the shining hope of Europe free:
The league of sober folk, the Workers' Earth
Bringing long peace to Cornland, Alp, and Sea.

It breaks his heart that kings must murder still,
That all his hours of travail here for men
Seem yet in vain. And who will bring white peace
That he may sleep upon his hill again?

The Declaration of War and the events immediately following have given rise to a great deal of verse writing. Those who have followed the newspapers and magazines or have read such an anthology as "Fifes and Drums," the contribution of the Vigilantes, will be struck by the note of quiet sincerity and steadfast determination which our war verse in general expresses. This is shown perhaps most effectively in such poems as "America Unafraid" by Mr. Charles Hanson Towne, "April Second" by Mrs. Garrison, or "The Flag Goes Up" by Amelia Josephine Burr:

THE FLAG GOES UP

Whether we gave him doubts or praises,
  That is a thing of yesterday.
We rally to the flag he raises,
  We go the inevitable way,
But not with pageantry or shouting—
We're done alike with boast and doubting,
We take the trail that duty blazes
  Be the issue what it may.

Brave are the words that he has spoken,
  The words that we have made our own.
Our blood and sweat shall be the token
  We fight for righteousness alone.
O God, who knowest all the making
Of noble vows—and all their breaking—
Grant that our word be never broken,
  Our banner never overthrown.

Give us to keep without misprision
  The truth our souls have understood,
Clean above hatred and derision,
  Strong through our evil days and good.
To love life's worth, not life's preserving,
More than success to honor serving,
Faithful forever to our vision
  Of liberty and brotherhood.

Our indignation against the actions of Germany is vigorously expressed in "The Binding of the Beast" by Mr. George Sterling:

He plotted in the den of his lordship over men;
He wrought his grim array and he hungered for the Day.
Then the loosing-word was spoken; then the seal of Hell was broken;
Then its Princes were assembled for the feast;
But against the Vandal night rose the star of Freedom's light,
And a world was called together for the binding of the Beast.

They have seen it for their star; they have come from near and far;
From the forges of the North go the men and young men forth,
Having found the holier duty, found the true, the final beauty,
As their brothers of the South and of the East.
In the forests of the West they have given of their best,
With strong hands and patient for the binding of the Beast.

For his pact with Death and Hell, let us bind the monster well,
That the world go free indeed from his arrogance and greed!
By the pact he dared to sever make we treaty with him never,
Till the murder-venom in his blood has ceased!
By his trust in force and war, end we those forevermore,
As the nations sit in council for the binding of the Beast.

The share of women in this war is shown not only by the fact that some of the best war poetry has been written by them since the Declaration, but more concretely in such verses as "A Song" and "To the Mothers" by Marion Couthouy Smith, and "To Our Women" by Amelia Josephine Burr.

I have said that our war poetry was and is serious. It is more than that, it has a note of devotion, and of faith. We know that the war in Europe has brought home to those countries the knowledge that he who believes in something higher than himself will fight best for his native land. That sense of consecration is well expressed in "Our Bargain" by Amelia Josephine Burr:

Is all our world upon a counter laid?
  That is their taunt who say they know us well.
Then, like true merchants, let us to our trade;
  What wares has *God* to sell?

A world at liberty, a path made clear
  For steadfast justice and enduring peace,
Nations released forever from the fear
  Of evil days like these—

A sound investment! but—the price is high.
  Long-hoarded wealth in ruin, flame and steel,
Death lurking in the sea and in the sky—
  What say you? Shall we deal?

Shall we know terror, shall our strong ones fall
  That others' children, fearless in the sun,
May see our visions and accomplish all
  That we must leave undone?

We take thy bargain, Master of the Mart.
  Though we may flinch, we cannot turn away.
Send thy resistless fire upon our heart
  And make us strong to pay.

Most definite and most frequent, however, is the poetic exhaltation of the flag. It is natural in a democracy that this should be so. Leaders and institutions come and go, but in this concrete symbol is concentrated all that other countries have accumulated through centuries of tradition. Its meaning to us, old and new, is strikingly expressed in Mrs. Garrison's "The Stars and Stripes":

We who in the old days—the easy days of pleasuring—
  Loitered in the distant lands—we know the thrill that came
When in far, foreign places, above the stranger faces,
  The sight of it, the might of it, would wake us like a flame.
Our own flag, the one flag, it stirred our blood to claim.

We who in these new days—these days of all confusion—
Look upon it with the eyes of one long blind who sees.
We know at last its beauty—its magnitude of duty—
  Dear God! if thus it seems to *us,* what will it mean to these
  Who stay for it, who pray for it, our kindred over seas?

Those who face the red days—the white nights of fury,
Where death like some mad reaper hacks down the living grain—
  They shall see our flag arise like a glory in the skies—
The stars of it, the bars of it, that prove it once again
The new flag, the true flag, that does not come in vain!

The war poetry of our nation while it has not been written generally by our greatest poets, needs no apology. It has not celebrated the lust of carnage, nor has it to its discredit any hymn of hate. It has celebrated the spirit of sacrifice, the heroism of an individual, the undaunted courage of our race. It has never hestitated to record the defeat of our arms if the defeat like that of Lawrence on the "Chesapeake" was more glorious than victory. His dying words "Keep the flag flying: Don't give up the ship" have been made the keynote of much of our war verse, for it is that quality of persistence in the face of death that has appealed to our nation. Our poets have never had to celebrate a war for any other cause but freedom, for ourselves or for others. And, therefore, at the close of our wars, there has been no bitterness, but a facing of the future with an uplifted spirit; a spirit expressed in the closing words of Lowell's "Commemoration Ode":

> O Beautiful! my country! Ours once more!
> Smoothing thy gold of war dishevelled hair
> O'er such sweet brows as never other wore,
> And letting thy set lips,
> Freed from wrath's pale eclipse,
> The rosy edges of their smile lay bare,
> What words divine of lover or of poet
> Could tell our love and make thee know it,
> Among the nations bright beyond compare?
> What were our lives without thee?
> What all our lives to save thee?
> We recked not what we gave thee;
> We will not dare to doubt thee,
> But ask whatever else, and we will dare!

AMERICAN FOOD PLANTS, PAST AND PRESENT, COMPARED WITH THOSE FROM OTHER COUNTRIES

By John W. Harshberger

Professor of Botany

The great world war in which America is now engaged has emphasized the importance of studying our food supplies, their nature, their source and their proper conservation. The necessity for such a study has been indicated by the detailed inventory which has been made of the available foods and by the appointment of a food commissioner in the person of Herbert Hoover, whose experience in the distribution of the American relief supplies in Europe before our entrance, as a nation, into the war fitted him for the arduous duties of his office. It behooves us, therefore, to make a survey of food plants, past and present, with especial reference to our native American food producing plants. This leads me, as one long interested in ethnobotany, or the botany of peoples, to treat of them under three heads. First: the food plants used in Europe before the discovery of America. Second: the food plants of the American continents introduced into general cultivation since the European occupancy of North and South America. Third: the prominent food plants which by their peculiar fitness as African, American, Asiatic, European or sea-island plants have survived, and are in use at the present day.

If we study the kinds of foods used by the peoples of Europe before the discovery of America, we find that national prejudices and the division of the various populations into the very poor and the very rich, into the peasant and the ruling classes tended to prevent the introduction of new foods, so that the dietary was an extremely meager one, chief dependence being placed on animal foods to the exclusion of those that were purely vegetable. An American, who has

not been abroad, can hardly appreciate how, even at the present, meat foods with the common cereals, used in the form of bread, are the main ones of large numbers of our European brothers and sisters. This fact was strongly impressed upon me on my first visit to England in 1892, when everything was new and strange to me. My first night on shore was spent at Peacock Inn at Rowsley in the Peak Country. The dining room was furnished with substantial furniture, among which was a long sideboard on which were placed various roasts and joints of beef and other meats from which the guests were expected to help themselves, if hungry. The damp raw air of the English climate stimulated my appetite and meats were eaten freely without discomfort. I began to appreciate why meats and alcoholic drinks could be used in such quantities without the bad effects which would follow such a procedure in America, with its drier, more electric, and hence, more bracing climate. This is a climatic reason for the necessity of greater abstinence on the part of Americans.

The food of the ancient Hebrews was of the simplest kinds, as bread, milk, rice, honey and vegetables. Every "green herb for food" was given them. The food which they consumed while in the land of Egypt in the house of bondage is mentioned in Numbers XI: 5. "We remember the fish which we did eat in Egypt freely; the cucumbers, and the melons and the leeks and the onions and the garlic." How plain was the food of the patriarchs appears from the pottage of lentils and bread which Jacob had prepared and for which Esau, his brother, sold his birthright.

The Spartan public mess served in the barracks was a simple fare. The following foods were contributed to a common stock: barley, meal, wine, cheese and figs with a little money to buy fish and flesh. Then there was that mysterious mess into the compounding of which an element of poetry entered. "Red wine and in it barleymeal and cheese and honey and mighty drugs withal of which if a man drank he forgot all

that he loved."* The Homeric heroes reposing after their battles partook of a dish of beans, or a plate of peas. The liking of the Romans for plants of the leguminous family is shown in the appellations Fabius, Cicero and Lentulus, who shed humble renown upon the broad bean (*Faba vulgaris*), the chick pea (*Cicer arietinum*) and the lentil (*Ervum lens*), I am reminded also of the name applied to the scar of the bean (*hilum*). It gave rise to an oath *ne-hilum* applied somewhat like the Anglo-Saxon swear word to a good-for-nothing, who was not worth the scar on the surface of a bean. From *ne-hilum* comes our word nihilist, nihilism, through *nihil,* nothing.

Parsley formed the crown with which Hercules crowned himself as conquerer of the Nemean lion and which Anacreon celebrates as the emblem of joy and festivity. The cabbage was used by the Egyptians, as was also the garlic, leek and onion. Alexander, the Great, probably introduced the haricot into Europe, having been struck as a true botanist and disciple of Aristotle with fields of it in India. Asparagus came from Asia and the Romans cultivated it with such success that stalks were raised which are said to have weighed three pounds each. They also grew the alfalfa as a cattle food, while truffles and mushrooms were relished by them, the latter having been used by Claudius and Nero, who were royal mycophagists. The sweet cherry was a favorite of Mithridates, King of Pontus, who established its ancient position as a fruit. The olive was venerated and its fruit was used as a *hors d' oeuvre* to clear the palate, and its oil took the place of butter in the warm countries of the Mediterranean.

Coming down to our early Anglo-Saxon forefathers from whom many of the oldest established customs of cooking, eating, drinking and cultivation have come, we find, that in the Saxon dinner, the dishes consisted of oxen, sheep, deer, and swine, both wild and domestic, not excepting certain portions of the sea pig, or porpoise—a food not at present much in repute, but at that period no infrequent article of

*Hackwood, F. W.: Good Cheer, 1911: 38.

soup, and one of *seathen,* or boiled goose. The bread was of the finest wheaten flour, and lay in two silver baskets upon the table. Almost the only vegetable in use among the Saxons was kalewort, and the only condiments were salt and pepper. These various articles were boiled, baked or broiled and were handled by the attendants on small spits to the company. Their dessert consisted of grapes, figs, nuts, apples, pears and almonds. Their drinks were mead, cider, ale, wine and diet. There were two sanda or dishes, of *sodden syflian* or piment, the latter being an acid wine with honey, sugar and spice added. Claret came into use about 1504. Apples and pears are amongst the oldest of English fruits. On Twelfth Night, June fifth, in Devonshire, the guest joined hands round an apple tree and sang:

> Here's to thee, old apple tree!
> Hence thou mayst bud, and whence thou mayst blow!
> And whence thou mayst bear apples enow!
> Hats full! caps full,
> And my pockets full, too! Huzza!

Matthew Paris describing the bad season of 1257, observes that "apples were scarce and pears scarcer, while quinces, vegetables, cherries, plums and shell fruit were entirely destroyed." The last named included hazel-nuts, walnuts and perhaps chestnuts. Medlars should also be included, but there seems a scarcity of indigenous fruits that were used. Among the imported fruits were almonds, dates, figs, raisins, citrons, grapes, oranges and pomegranates. During the period 1259 to 1400, the manor house possessed a garden and an orchard. But the former was very deficient in vegetables. The householder of the thirteenth and fourteenth centuries grew onions, leeks, mustard and garden peas. He probably also grew the cabbage. Apples and sometimes pears are mentioned as part of the orchard produce, but we read of no plums, except once of damsons. A regular part of the produce of the orchard was cider, and its low price seems to suggest that it was made in considerable quantities. Crabs were

collected to manufacture verjuice, an important item in mediæval cooking.* The three leguminous plants—beans, peas and vetches—were generally, but not exclusively, cultivated. Rye was cultivated sparingly.

When John, King of France, was brought captive to England after the battle of Poitiers (1356), one of the costly items of his expenditure was for sugar.† The demand for sugar (1591) was continually rising with the increasing habit of its consumption. It was still, however, a great luxury, its price ranging from nine pence to fourteen pence per pound. In 1593, there were seven refineries in London. Gilbert Parker in his novel "A Ladder of Swords" (New York, 1904), describes a medieval repast (page 40). "Clanking and gurgling he sat at a mighty meal of turbot, eels, lobsters, ormers, capons, boar's head, brawn and mustard, swan, curlew and spiced meats. This he washed down with bastard malmsey, and good ale, topped with almonds, comfits, perfumed cherries."

A list of the provisions for the feast of an archbishop's enthronement in 1295 included ling, cod, salmon, fresh salmon, white herrings, red herrings, salt sturgeon, salt and fresh eels, whelks, pike, tench, fresh lampreys, salt conger eels, roach, seals and porpoises. There were olive oil, honey, mustard, vinegar, verjuice, spices, comfits, bread, wafers with wines and beer in proportion.‡ The condiments of our English forefathers included pepper, ginger, clover, garlic, cinnamon, galingale, vinegar, verjuice, and the following herbs: sage, parsley, hyssop, mint, pellitory, rosemary, saffron. The Normans fared sumptuously on great occasions with boar's head and the peacock served to the blare of trumpets. Much wild game was shot for the tables of the nobles. The list includes deer, swans, pheasants, partridges, plovers, quails, grouse, etc., which do not concern us in this discussion. Our ances-

*Rogers, James E.: A History of Agricultural Prices in England. Oxford, 1866, p. 17.

†Good Cheer, p. 86.

‡Good Cheer, p. 92.

tor's had great faith in the medicinal value of herbs, as shown in one of the Roxborough ballads.

> Here's pennyroyal and marygolds,
> Come, buy my nettle tops!
> Here's water-cress and scurvy-grass,
> Come, buy my sage of virtue, ho!
> Come buy my wormwood and mugworts,
> Here's all fine herbs of every sort!
> Here's southern-wood that's very good,
> Dandelion and houseleek!
> Here's dragon"s-tongue and wood-sorrel,
> With bear's foot and horehound!

To the herbs mentioned above should be added bugloss, spinach (Spanish vegetable), capers and fennel.

With the beginning of the Tudor period, the first king of which dynasty was Henry the Seventh (1485-1509), came the stirring age of discovery which introduced a great change in the character of the food of the people of Europe. New food-stuffs were discovered and introduced. The year 1520 is remembered in this connection in an old rhyme;

> Turkeys, carp, hops and beer
> Came into England all in one year.

Out of the wars at home and abroad with pestilences destructive to man and beast emerged one great agricultural change which by 1485 was practically completed. Feudal land owners, instead of pursuing the patriarchal system of farming their own demesnes by the labor of their dependents, had become landlords by receiving rent. Home farms and "assort" or reclaimed lands were cultivated, not by lords of the manor through bailiffs, but by free holders, lease holders and hired laborers. With the dawn of the Tudor period, which included the reigns of Henry the Seventh, Henry the Eighth, Edward the Sixth, Mary and Elizabeth, England became a mercantile country. The amount of money in actual use was increasing; men possessed more capital, could borrow it more easily and invest it to great advantage. Com-

merce was pre-eminent. Feudalism was dead or dying and trade was booming. The Middle Ages were passing into modern times.

The new plants introduced from the Americas and elsewhere were very slowly accepted by the English and other European peoples. It was hard for them to replace the food plants which had been long in use and for which the systems of garden and field culture had been adapted. It was hard to overcome the prejudices of the people who looked askance upon the new introductions. They made but slow progress in their acceptance as everyday articles of diet. "I introduced the turnip into the field," says Tull, "in King William's reign (1689-1695); but the practice did not travel beyond the hedges of my estate till after the peace of Utrecht (1713). Potatoes were even less successful, although introduced into England long before. John Forster (1664) urged their adoption as a field crop. This same conservatism as to the use of new food plants was evidenced an hundred years before in the reign of Elizabeth (1558-1603). Professor E. P. Cheyney of our university in his "A History of England" (I: 31) speaking of the Queen's household writes: "Early in the Queen's reign the Secretary's diet in the court consisted on a flesh day of a first course of beef and mutton, veal, capon, conies and baked meats, and a second course of lamb or fowl, lark and tarts. On a fast day, the first course consisted of ling, salmon or herring, pike, plaice or whiting, haddock or codfish or baked meat; the second course of coney or lamprey, or roach, or smelts, finishing up with a tart. Somewhat later when the habits of expenditure had become greater, the lord steward's allowance provided at each of the two meals of a flesh day for a first course of three kinds of meat, capon or rabbit, custards and fruits; a second course of lamb or kid, larks, plovers, or pigeons and either tarts or fritters. For each meal, he had butter and eggs, four sorts of bread and four gallons of beer or ale." An estimate of "Her Majesty's Diet for Dynner with the Particular Prices Thereof" gives seven kinds of meat, six kinds of domestic poultry and eight

varieties of wild fowl, custards, tarts, four gallons of beer and ale and three pints of wine. This meal cost 6£ 10 sh., equal perhaps to 150 dollars modern value.

The meat diets, described above, were difficult to replace by the introduction of new edible plants and fruits from abroad. Leaving out of account for the present the plants of American origin which came in with the active exploration of the new continents a few additional facts are of interest. By the year 1600, oranges and lemons were cried about the streets of London* and were imported from Spain:

> **Fine Sevil oranges, fine lemmons, fine;**
> **Round, sound and tender, inside and rine,**
> **One pin's prick their vertue show,**
> **They've liquor by their weight, you may know.**

The better kind of cabbages were introduced from Holland by Sir Richard Ashley of Dorset about 1510, and were first taken into Scotland by Cromwell's soldiers. The cauliflower was first brought into England from Cyprus about 1603, and broccoli from Italy in the previous century. The finer kinds of bean were introduced in the reign of Henry VIII. It was in 1565 that Sir John Hawkins introduced the potato into Ireland, and twenty years later, Sir Walter Raleigh brought it into England. This fact introduces us to the second chapter of our story of food plants.

The English and Spanish explorers on their voyages of discovery and in their inland expeditions through various parts of North and South America in search of gold and other adventures soon came in touch with the semi-civilized nations of the new world. The English came in contact with the North American tribes, who were in the beginnings of a primitive agriculture, and we have abundant evidence that they learned the use of the native American food plants through the instruction of friendly redmen. Squantum taught the

*Good Cheer, p. 137.

settlers of the Massachusetts Bay region the use of maize and taught them how to plant and grow it. Similarly in Mexico and Central America, Cortez came into touch with the culture of the Mexican Indians who under Montezuma and other kings had reached a comparatively high stage of agricultural development and in the arts. Pizarro in Peru discovered an agricultural people with extensive systems of irrigation where under desert skies they were able to raise abundant crops for the sedentary Indians of that country. Soon the returning ships began to carry back to Europe, first as curiosities, the various vegetable, animal and mineral products of the new world. The natives were also carried back to acquaint the royal families with the character of the new lands recently visited. If we make a survey of the pre-Columbian races with regard to the character of their food, we find that we can divide the tribes and the territory occupied by them into several groups and areas. We can recognize in North and South America eight areas and groups of tribes. Three of them were hunting areas and tribes. Three of them were agricultural. One consisted of fishing lands and tribes and one area was tenanted by the gatherers of wild seeds. Occasional dependence upon plant foods must be emphasized in tribes that obtained their supplies chiefly by hunting and fishing.

The wild tribes and the agricultural tribes used a considerable number of food plants, either as wild uncultivated species, or those which had so far been domesticated as to be grown in garden and field culture. There were, however, two native cultivated food plants that rise to the level of chief staples, viz., maize and manioc (cassava). Both take the highest rank among the world's foods. The following list of native American plants will show in the enumeration a number of others which at present are of prime importance. The potato, the cocoa, the tobacco and the tomato are a few of such plants.*

*Cf. *Clark Wissler:* The American Indian, 1917: 20.

Name. *Area of Cultivation.*

Agave or American aloe (*Agave americana,* Linn.), Mexico to Chile

Alligator pear (*Persea gratissima,* Gaertn. f.), Central America and West Indies

Arrowroot (*Maranta arundinacea,* Linn.)..Tropical America

Achira (*Canna edulis,* Ker Gaul).....Peru

Barnyard grass (*Echinochloa crus-galli,* (L.) Beauv.), Mexico and Southern United States

Bean, kidney (*Phaseolus vulgaris,* Linn.), North and South America

Bean, Lima (*Phaseolus lunatus,* Linn., var. *macrocarpus,* Benth).....Brazil and Peru

Breadfruit (*Artocarpus incisa,* Linn.).....Hawaii

Coca or cocaine (*Erythroxylon coca,* Lam.), Peru and Bolivia

Cocoa (*Theobroma cacao,* Linn.).....Tropical America

Capsicum or Chili pepper (*Capsicum annuum,* Linn.), Tropical America

Cashewnut (*Anacardium occidentale,* Linn.), Tropical America

Ceriman (*Monstera deliciosa,* Linn.).....Tropical America

Chayote (*Sechium edule,* Siv.).....Tropical America

Cherimoya (*Annona cherimolia,* Mill.).....Peru and Brazil

Corn (see Maize)

Cotton (*Gossypium barbadense,* Linn.)....Tropical America

Gourd (*Cucurbita pepo* var. *ovifera,* Linn.), North and South America

Granadilla (*Passiflora quadrangularis,* Linn).....Peru

Guava (*Psidium guajava,* Linn.).....Tropical America

Jerusalem artichoke (*Helianthus tuberosus,* Linn.), Mississippi Valley

Madia (*Madia sativa,* Molina).....Chile

Maize (*Zea mays,* Linn.).....North and South America

Manioc (*Manihot utilissima,* Pohl).....South America

Maté or Paraguay tea (*Ilex paraguayensis,* St. Hil)...Brazil

Papaw (*Carica papaya,* Linn.), West Indies and Central America

Name.	*Area of Cultivation.*
Peanut (*Arachis hypogaea,* Linn.)	Peru and Brazil
Pineapple (*Ananasa sativa,* Schult f.),	Mexico and Central America
Potato (*Solanum tuberosum,* Linn.)	Chile and Peru
Prickly pear or Indian fig (*Opuntia ficus-indica,* Mill),	Mexico
Pumpkin (*Cucurbita pepo,* Linn.)	Temperate North America
Oca (*Oxalis tuberosa,* Molina, and *O. crenata,* Jacq.),	Chile and Bolivia
Quinine (*Cinchona calisaya,* Wedd.)	Bolivia and Peru
Quinoa (*Chenopodium quinoa,* Willd.)	Columbia and Peru
Squash (*Cucurbita maxima,* Duchesne)	Tropical America
Star apple (*Chrysophyllum cainito,* Linn.),	West Indies and Panama
Sweet potato (*Ipomoea batatas,* Poir)	Tropical America
Taro (*Colocasia antiquorum,* Schott)	Hawaii
Tobacco (*Nicotiana tabacum,* Linn.),	North and South America
Tomato (*Lycopersicum esculentum,* Mill.)	Peru
Wild rice (*Zizania aquatica,* Linn.)	Temperate North America
Yam (*Dioscorea batatas,* Deene)	Tropical America

If we contrast the diet of the people of Europe before the discovery of America with that of the present day in Europe and in the Americas, we find that the too exclusively meat bill-of-fare has been greatly enlarged by the introduction and cultivation of plants of American origin, which are considered now as indispensable adjuncts to the everyday ration. What would the world do without the kidney bean, the chocolate plant, maize (in all its forms), potato, sweet potato and tomato? The absence of such table fruits as the banana, orange, grapefruit, pineapple and such dessert nuts as the peanut, brazil nut, walnut, pecan, would have been noticeable, if we had dined out during the reign of Queen Elizabeth. The presence of such plants in our present-day repasts has added very much, not only to our pleasure, but, also to our health, for

a variety diet with vegetable substances is much better than a meal of meats, fats and other heavy foods, such as the plum-pudding of the Elizabethan bill-of-fare. Not only has the use of these plants been beneficial to physical man, but their growth and distribution have developed our ocean travel routes and our modern systems of transportation.

It has taken the farmer away from a narrow system of agriculture to a broader one. The farmer puts less dependence for financial well-being upon a single crop, which may fail, and has developed a diversified agriculture with a scientific rotation of his crops. Such a rotation of crops prevents rapid soil deterioration. It prevents the spread of injurious fungous and insect diseases. It enables the farmer to occupy the ground continuously and to get larger financial returns from a single piece of ground.

The value of such diversified agriculture to a country is emphasized during the present world strife, for it enables the American people to substitute other foods for those which are demanded by our army and navy and by our allies abroad, who require the staple foods such as meat, wheat, potatoes and rye more than we do. The fact that the American people have been accustomed to a diversified ration, sometimes of unusual character, has enabled them to shift from one kind of food to another kind without hardship. We do not feel afraid to try new foods, as European people are afraid. Although we are conservative in such matters to too great a degree, yet we are more willing to try new food introductions than are the people of Europe, who are ultra conservative. When one crop fails with us, with our great extent of climate and territory, we are able to substitute some other crop of almost equal food value, which, for that particular season, has been grown more successfully. The plea which has been made for the conservation of certain foods to supply the armies and starving people abroad has enabled us to substitute other nutritious foods for those which we have sent away from the country. Our troubles seem to be due not so much to a scarcity of some particular food, but to poor, or inadequate,

systems of transportation and to exorbitant rates charged for the distribution of the products which are available.

Let us look at the ancient use of some of our more important food plants, as such a survey will show us the stage of civilization of the native races which first domesticated them. The maguey, *Agave americana,* has been used from time immemorial to make a Mexican beverage, known as pulqué, which has slightly laxative properties and which medicinally is diuretic. The plant produces a rosette of stiff succulent leaves, which may reach a length of six to eight feet, and are marginally armed with spines. When the flower stalk begins to develop, it is cut out by the Mexican Indian and a cup-shaped depression is formed, into which the juices collect in the form of the so-called honey-water, or *aguamiel.* This is collected with long gourds by suction and the contents of the gourd are transferred to pig-skin bags, which are fastened to the saddle bars of the patient burro. The contents of the skin-pouch are placed in open vats, with the hair uppermost, where the *aguamiel* ferments with the formation of pulqué, which is carried to the towns and sold in corner shops, known as *pulqueria.*

Maize (*Zea mays*) formed the staff of life of the aboriginal North American Indian. It was easily cultivated and, even among the aboriginal husbandmen, a number of distinct varieties had originated. One of the most remarkable of these races is a Zuni corn, which, as a drought resistant variety, was planted eighteen inches deep. The peculiar faculty of reaching the surface, possessed by no other corn, is due to the elongation of the mesocotyl, up to 36 cm. in length in some cases. This enables the first green leaves to unfold above the soil surface. The Pueblo Indians used corn in many of their ceremonial observances, such as the snake dance, and in their corn planting and harvesting, they observed certain rituals handed down from their forefathers. The prayers for rain and the methods of cultivation of the maize in isolated clumps argue for a very ancient domestication of this valuable plant.

Kidney bean. Among the Indians of the Southwest may be found varieties of beans that have been grown before pre-Columbian times. Centuries of adaptation have produced, therefore, types well suited for the extremes of heat and cold of the country. The newly recognized tepiary (*Phaseolus acutifolius*) was domesticated by the prehistoric tribes of the southwestern United States and northern Mexico, who had at least forty-seven distinct types. The earliest accounts of the agricultural productions of the New World always associated the cultivation of maize with that of the bean and the pumpkin. While maize, potatoes, beans, quinoa, tobacco and cocoa were the chief agricultural products of the highland Indians of South America in the tropic areas of that continent, notably in the Amazon basin, manioc or cassava took its place. Even today, among the wild tribes which live along the Amazon and its tributaries, chief dependence is put upon the cassava, which is cultivated extensively. The Indian removes the mature rootstocks from the ground, he breaks off a piece which he sticks into the soil again, to provide for a future crop, according to our Dr. Farrabee. Instead of storing the cassava, the Indian secures by this treatment a continuous production of the cassava. The underground part is full of starch and other nutritious substances, and one variety has a bitter poisonous substance which is removed by pressing and cooking.

Sir E. F. im Thurm, gives a detailed account of the method of preparing cassava in his book, "Among the Indians of Guiana." The operations are principally carried out by the women, who squat upon the ground and peel the outer rind from the cassava "roots" with a large knife. Each "root," after being peeled is washed thoroughly, when it is taken in hand by another woman, who scrapes it vigorously up and down a rasper, consisting of a short board studded with small bits of stones. The pulp, as it comes from the scraper, is put into bags, which are hung under the roof of the native hunt. The bag, or *matapie,* is woven from strips taken from the leaves of a palm. The poisonous juice is squeezed out by

suspending a heavy weight from the lower end of the tightly packed matapie. In other parts of the country, a heavy lever is placed through a loop at the ends of the matapie and one end is fixed to the floor, while, upon the other end, the woman seats herself, so that her weight exerts a powerful leverage on the bag, which is drawn taut, resulting in the expression of the juice. The cassava, freed from the juice, contains but little poison, and what remains is entirely dissipated by cooking. The meal is taken from the matapie, broken over a sieve, and then sifted into coarse flour. The juice is boiled down to a thick syrup, called *cassareep,* which is no longer poisonous, and is issued as a constituent of tropic sauces.

Potatoes form such an important food to a large number of civilized people that it is hard to believe that their use began after the discovery of America. They were not extensively cultivated even by the American tribes, except among the Indians of the western Andes, where the potato plant, *Solanum tuberosum,* was native, as it was also in the mountains of Mexico, where I have collected the wild plant at an elevation of 11,000 feet. The Spaniards found the ancient Peruvians cultivating the potato and storing the tubers for winter use. They also discovered that the natives of the Bolivian highlands froze their potatoes, first by soaking them in water and then exposing them to the night temperatures of high mountain elevations. Afterwards the frozen tubers were sun-dried and stored in the hard dried condition. In this state, as chuno, they were carried on long journeys which the llama drivers made in conducting their primitive overland commerce of pre-Columbian days. Although introduced into Europe at an early date, and into England during the Elizabethan age, it was many years before the people of Europe began to appreciate the potato. During this world war the Central Powers are putting great, if not chief, reliance upon the potato to feed their people and are conserving the crop by rigid economy.

The peanut, *Archias hypogaea,* and the chenopodiaceous plant, quinoa, *Chenopodium quinoa,* were cultivated anciently

by the agricultural tribes of the western slopes of the Andes. The first named became deservedly popular, as its seeds have a high food value, while the use of the latter is still confined to the mountainous regions of South America. About Lake Titicaca, on the high plateau of Bolivia, where oats, wheat and maize will not mature, we find the Indians using the seeds of the quinoa (ken-wah), which are black and spheric, not much larger than the head of a pin. Out of these small seeds they made a mush which they ate with milk.

The South Sea islanders, especially those of Hawaii, cultivated the taro *Colocasia antiquorum,* which was introduced on their first canoe voyages to the group in prehistoric times. The plant has no stem, but large heart-shaped leaves, which suggest one of the popular names of the plant, that of elephant's ear. The leaves, leaf stalks and underground rootstock are all utilized for food. The plant, called dasheen in the United States, can be grown from Long Island southward to Florida. In Hawaii it is grown in gardens, or field patches. When mature the "roots" are dug up, washed and then roasted or baked. They are next put into wooden trays and pounded with water into a thick dough, which is allowed to ferment. This dough is called *paiai,* and when thinned with water and fermented, it becomes *poi,* which is eaten by thrusting the forefinger of the right hand into the mass and passing the food to the mouth. The use of the forefinger for this purpose has led to its being called, in the Hawaiian vernacular, the *"poi finger."*

The survey which we have made of the aboriginal uses of a few of the more important American food plants brings us finally to a consideration of the present-day conditions and future of these food plants, for the great war will introduce great changes in our habits and methods of life. Our food is sure to undergo a change. Chief dependence should not be put upon anyone food plant, or set of food plants. We must diversify our systems of agriculture and horticulture, as previously intimated. We must grow those plants which will succeed best in the different kinds of climatic and soil

areas, which are found in America. A classification of the climatic areas has been attempted by Robert De C. Ward,* who has proposed a number of rainfall types and subtypes for the United States. When this is accomplished for the soils, and other factors upon which our agriculture depends, we will be able to assign the various crops to those areas with more certainty, as to their successful growth. Much is to be anticipated from the early publication of the Agricultural Atlas in course of preparation. By educational propaganda, we must teach our American people to use a greater variety of vegetable and other plant products for three chief reasons. First, because it is more healthful to do so; second, because the soil is less rapidly deteriorated; third, because we have learned that in times of scarcity it is important to be able to utilize some other food which may be relatively more abundant. Agricultural production will be improved greatly, for the best use of all our land will come when this change in the habits of the American people is accomplished. There are large tracts of land which cannot be utilized, because our people do not want the plants which can be grown upon them. So long as the home market does not demand any other articles of food than those staple ones to which our ancestors in Europe were adjusted, there can be but little use made of districts of our country for which certain plants are most fitted. These proposed changes in the consumption of food will make it possible to construct a national system of agriculture. So I wrote in 1893.† It is even more true today, for a considerable number of new food plants have been introduced since 1893, which have become fairly popular and well known.

When we reach the time that plants will be used on their merits, not because their use is due to prejudice or to custom, it will be possible to utilize a great many valuable food plants. New agricultural areas will be developed coincidently. The introduction of grapefruit is a case in point. The soils of the Miami limestone region of southern peninsular Florida

*The Geographical Review, August, 1917.
†Maize: A Botanic and Economic Study, p. 195.

are peculiarly adapted to the growth of the grapefruit tree, and the demand for the fruit has spelled prosperity to many south Florida horticulturists. The lime does remarkably well on some of the Florida keys. Their future is dependent upon the exploitation of the lime as a fruit. Other food plants will come into prominence when this fact is recognized by our people. The taro, the mango, the papaw, the breadfruit, the date, the fig, the yam, the udo, the witloof celery, the Chinèse cabbage, the jujube, the Chinèse persimmon, the bamboo, the Mong bean, the chayote, the hawthorn, the avocado, the roselle are some of the plants which are pressing for recognition.

David Fairchild, Agricultural Explorer of the United States Department of Agriculture, in a lecture, entitled "The Palate of Civilized Man and Its Influence on Agriculture," given in this city last October, before the Franklin Institute, truly said: "It is not generally recognized that the crops which we are now growing are those dictated by the fashion in foods rather than as the result of careful experimentation on the part of civilized man. The present war, which it was predicted would be a food war, has brought out in a striking way the fact that one of the great stumbling-blocks in the way of a quick increase in our food supply lies in the conservatism of taste of civilized races accustomed to certain kinds of foods and refusing others equally good because they are strange to them. For twenty years the Office of Foreign Seed and Plant Introduction, of the Department of Agriculture, has been studying the crops of the world and has been experimenting with such as are suited to our climatic conditions and can be grown here."

We have made great progress in the twenty-seven years in which the speaker has been interested actively in such matters. The present great struggle in which we are engaged will, no doubt, teach our people many lessons, and it is for us, as botanists and scientific men, to point the way to a more just realization of the greatness of this country of ours and to the opportunities which present themselves to make us well-fed, well-clothed, well-housed, happy and truly great.

IS OUR FUEL SUPPLY NEARING EXHAUSTION

By Robert H. Fernald

Whitney Professor of Dynamical Engineering

"Food will win the war; don't waste it." This effective slogan has convinced us of the very essential part which conservation and proper distribution of food are to play in the ultimate winning of the war. Few of us, however, appreciate how vitally essential, if not paramount, is fuel in the great world struggle. Our slogan might well be: "Fuel and food will win the war; don't waste them."

Some months ago the Honorable Franklin K. Lane, Secretary of the Interior, was reported as saying: "Not only food, but fuel is a vital need of this country and of our Allies—coal to run the ships and railroads, to feed the iron furnaces, and furnish steam for all the manufacturing plants, coal in greater quantities than have ever been mined in the United States or in any part of the world; and this is being met in truly American fashion by the operators and owners of the mines and by the diggers of the coal."

As pointed out by Van Hise* in 1910: "Coal is by far the most important of all the mineral products. Next to coal in importance is iron. These two are of much greater consequence than all of the other mineral products put together. The existence of extensive coal and iron fields has profoundly influenced modern civilization. The greatest commercial nations are Germany, England, and America, and each has extensive coal and iron deposits. Little Belgium, because of its important coal and iron deposits, is a hive of industry, occupying a position as a manufacturing nation far beyond what one would expect from its limited area and population."

The supreme industrial value of coal and iron deposits clearly substantiates the claim that France needs not only Alsace-

*"The Conservation of Mineral Resources in the United States," Charles R. Van Hise.

Lorraine, but also a very small strip of land (about three hundred square miles) close to Saarlouis, Germany, as shown by a glance at the maps in the *Philadelphia Public Ledger,* December 2, 1917, for here lie some of the finest coal deposits of the continent of Europe.

That fuel is the backbone of the present titanic struggle for world supremacy was completely driven home by the recent collapse in Italy. "For the want of coal her industries stopped; for the want of shells her guns were spiked; for the want of guns her army was powerless; for the want of an army her country was conquered by the Hun—and all for the want of some tons of coal."

If it be true that the domination of the world will rest with those nations that own or control the two most important natural resources—coal and iron—a somewhat startling sidelight is thrown on our possible relation to the great problems of the present century by Campbell's figures on the coal reserves of the world.

*Coal Reserves of the World**

	Short Tons
Americas	5,627,823,500,000
Asia	1,410,487,600,000
Europe	864,412,600,000
Oceania	187,842,900,000
Africa	63,755,900,000
	8,154,322,500,000

The portion falling to the United States alone is 4,205,154,000,000 tons, or over half of all the coal in the world.

The coal reserves by countries are as follows:

	Short Tons
United States, including Alaska	4,231,352,000,000
Canada	1,360,535,000,000
China	1,097,436,000,000
Germany	466,665,000,000
Great Britain and Ireland	208,922,000,000

*United States Geological Survey Professional Paper 100-A, by M. R. Campbell.

Siberia	191,667,000,000
Australia	182,510,000,000
India	87,083,000,000
Russia in Europe	66,255,000,000
Union of South Africa	61,949,000,000
Austria	59,387,000,000
Columbia	29,762,000,000
Indo-China	22,048,000,000
France	19,382,000,000
Other countries	69,369,500,000
	8,154,322,500,000

Of the tremendous stores of coal in the United States a considerable portion lies below a practical mining depth. Although in some instances in European countries coal has been mined at a depth of 6,000 feet, it is hardly probable that for many years commercial conditions in this country will warrant the removal of coal at a greater depth than 3,000 feet below the surface. Fortunately, nearly nine-tenths of the total estimated original coal reserves, or about 3,550,000,000,000 tons, lie at a depth not exceeding this 3,000-foot limit.

Although we are becoming accustomed to talking in billions, it is hardly possible to grasp the meaning of thirty-five hundred and fifty billion tons of coal. Perhaps some conception of this amount may be had from the statement that if all the unmined coal within 3,000 feet of the surface could be placed in one great cubical pile as solid as it now lies in the ground the pile would be eight miles long, eight miles wide, and eight miles high, *i. e.*, the length, the breadth, and the height of this great cube would be equal to the distance from City Hall to Hunting Park.

Living in Pennsylvania we are inclined to think that the greatest coal deposits of the country are in the East and largely in Pennsylvania. An examination of the government reports on the subjects reveals the fact that the two greatest continuous coal areas lie in Montana, Wyoming, and the Dakotas, and represent nearly three and one-half times the total coal reserves of the entire Appalachian region. A serious

situation confronts us, however, when we realize that our really high-grade coals—the semi-bituminous and anthracite of the eastern provinces—amount to less than one-seventh (or about 15 per cent.) of the available coal reserves of the country.

Approximately an additional 15 per cent. may be classed as coal of medium grade, but the bulk of our coal—70 per cent. of the entire supply—consists of low-grade bituminous coals and lignites.

It is perhaps well to correct a rather general impression that anthracite is the highest grade fuel. As a matter of fact, our semi-bituminous coals rank first, as shown by the following table of comparative heating values per pound of combustible material:

	B. t. u. per lb. (ash free)
Semi-bituminous	15,420
Anthracite and semi-anthracite	14,660
Bituminous	13,970
Sub-bituminous and lignite	8,560

The exhaustion of these semi-bituminous coals would be a far greater calamity than the exhaustion of the anthracite supply, as they are much better adapted for general commercial purposes and are more efficient than anthracite, the latter being used but little outside of the domestic field.

Naturally, figures on the production of coal in Europe are not available for the past two or three years, but the relative production of coal by the different countries of the world in normal times is shown by the following figures for 1912:

World Production of Coal in 1912

	Short Tons
United States	534,500,000
Great Britain	306,000,000
Germany	282,400,000
France	45,400,000
Belgium	25,300,000
Japan (1911)	19,400,000
Austria-Hungary	17,400,000
India	15,700,000
New South Wales	11,100,000

Of the world's production for the year 1912, 1,364,000,000 tons (82 per cent.) were produced by the United States, Great Britain, and Germany, the United States producing 39 per cent. of the total, or nearly as much as Great Britain and Germany together.

The extent of our industrial development may be better appreciated when it is realized that all but about four per cent. of our tremendous coal production is used in this country.

The rate of increase in coal production by the three principal coal mining countries has been as follows:

	1870	1890	1912
Germany	37,500,000	98,400,000	282,400,000
Great Britain....	123,700,000	203,400,000	306,000,000
United States ..	33,000,000	157,800,000	534,500,000

Although it has been pointed out that our most extensive fuel areas are in the western part of the United States, industrial pursuits, the availability of oil, the convenience of natural gas, and other underlying causes have resulted in extensive coal production east of the Mississippi River and comparatively little production throughout two-thirds of the total area of the United States, as shown by the following table of production and use of coal by the different states:

Production and Use of Coal by States (1915)

Anthracite:

	Produced (short tons)	Used (short tons)
Pennsylvania	89,000,000	23,300,000
New York	.....	20,800,000
New England	.....	13,800,000
New Jersey	.....	8,400,000
Illinois	.....	3,300,000
Wisconsin	.....	1,700,000
Minnesota	.....	1,700,000
Maryland and District of Columbia	.....	1,500,000
Remaining thirty states	.....	4,400,000

Bituminous:		
Pennsylvania	158,000,000	65,500,000
West Virginia	77,200,000	6,200,000
Illinois	58,800,000	40,000,000
Ohio	22,400,000	22,400,000
Kentucky	21,400,000	5,200,000
Indiana	17,000,000	16,100,000
Alabama	14,900,000	7,500,000
Colorado	8,600,000	5,100,000
Virginia	8,100,000	4,300,000
Iowa	7,600,000	6,900,000
Kansas	6,800,000	3,200,000
Wyoming	6,500,000	600,000
Tennessee	5,700,000	3,600,000
New England	.....	20,500,000
Michigan	1,200,000	10,300,000
Missouri	3,800,000	7,700,000
Wisconsin	.....	7,700,000
All other states	24,600,000	57,100,000

Of the individual states, with the exception of West Virginia, those producing coal are the largest users, 33 per cent. of the 1915 output of bituminous coal being used within the states producing it.

In the main, anthracite is used for domestic purposes and bituminous for industrial purposes.

The largest users of coal are the industrial steam trade, requiring over 30 per cent. of the mine output; the railroads, requiring about 24 per cent.; domestic and small steam trade —heating dwellings, apartment houses, hotels, office buildings, and heating and steam raising in small power plants—requiring 23 per cent. It is thus seen that even in normal times (1915) these three demands call for 412,000,000 tons, or 77 per cent. of all the coal mined in the United States.

Uses of Coal in the United States (1915)

	Bituminous		Anthracite	
	short tons	per cent	short tons	per cent
Industrial steam trade	143,800,000	33.0	18,800,000	21.1
Railroads	122,000,000	28.0	6,200,000	7.0
Domestic and small steam trade	71,300,000	16.0	50,000,000	56.2

Manufacture of coke.....	61,800,000	14.0		
Exported	18,800,000	4.2	4,000,000	4.5
Steamship bunker fuel....	10,700,000	2.4		
Used at mines for steam and heat	9,800,000	2.2	10,000,000	11.2
Manufacture of coal gas..	4,600,000	1.0		
Miscellaneous uses	700,000	0.2		

It is interesting to note that the railroads used 122,000,000 tons of bituminous coal and 6,200,000 tons of anthracite, and that the great industrial state of Pennsylvania used 65,541,000 tons of bituminous coal and 23,293,000 tons of anthracite. In other words, the railroads of the country used nearly twice as much bituminous coal as the entire state of Pennsylvania, but only a little over one-third as much anthracite as Pennsylvania. The total coal consumption, anthracite and bituminous combined, of the railroads is equal to nearly one and one-half times the total coal consumption of the state.

Contrary to popular belief, the amount of coal exported is very small. In 1915 our coal exports amounted to only 22,700,000 short tons, which was 13 per cent. more than for 1914, but 8 per cent. less than for 1913. During these years Canada took from one-half to three-fourths of the exported coal. The total exports amount to only about 4 per cent. of the total coal production.

As pointed out by the United States Geological Survey: "The noteworthy features of the export trade in 1915 were the increasing demand throughout the year from Europe and South America, and in the latter part of the year the scarcity of vessels in which to ship coal to these countries. If the supply of vessels had been adequate, the exports undoubtedly would have been much greater."

Our importations of coal are small, amounting to about one-third of one per cent. of the total production. Practically all importations are to the New England states, the northwestern states, and California, due largely to the accessibility of Canadian coal and local transportation facilities.

The use of coal as the chief source of fuel is comparatively

new. With the possible exception of a few European countries, the forests were depended upon for fuel until within fifty or seventy-five years. Although the draft upon our coal supply has just begun, it is time for us to realize that on account of the abundant supply and wide distribution of our fuel resources, on account of our relative freedom from large areas of congested population, and on account of our careless indifference to efficient utilization, we have neglected far too long the serious consideration of problems upon which hinge many of the possible activities of future generations.

The unrestricted use of our better grade fuels and the ruthless waste and neglect of fuels that should be of real commercial value are phases of our national extravagance that are little short of appalling.

In attempting to estimate the probable life of our coal supply it is necessary to determine (*a*) the draft we have already made upon the original supply and (*b*) the rate at which this draft is being made.

In a little over one hundred years we have taken from the mines to the close of 1917 something over 12,000,000,000 tons. If we assume the usual loss of one-half ton for every ton mined, the total exhaustion has amounted to 18,000,000,000 tons, which is one-half of one per cent. of the original available supply lying at depths not exceeding 3000 feet. Packed as densely as it lies in the ground, and remembering that the original supply in the storehouse would make a pile whose length, breadth, and height would be eight miles, the portion drawn away or exhausted to date would be represented by a slice eight miles long and eight miles wide and only 0.04 mile (210 feet) high.

If the consumption for the past one hundred years could be taken as a basis, we might reasonably expect our coal supply to last some 20,000 years, but we must remember that we only began to use coal a little over one hundred years ago and it takes the total production of the first sixty-eight years (from 1807 to 1875) to equal the production of the single year 1917. If for all future time we were to mine coal at

an annual rate just equal to that of 1917 (about 640,000,000 tons), with an allowance for unpreventable waste, then the coal supply should last 4,000 years, but it is well known that in 1917 the demand was greater than the supply, and there is ample evidence to show that for years to come the demand will be an ever-increasing one. An examination of our average annual coal production by decades since 1807 shows with what rapidity the rate of consumption is growing.

Average Annual Production of Coal by Decades from 1807 to the Close of 1917 (111 Years)

	Short Tons
1807-1817	1,000
1818-1827	65,000
1828-1837	608,000
1838-1847	3,100,000
1848-1857	10,000,000
1858-1867	20,700,000
1868-1877	47,300,000
1878-1887	97,800,000
1888-1897	173,000,000
1898-1907	333,000,000
1908-1917	525,000,000

Campbell* points out that if the acceleration shown by the figures for coal consumption by decades be continued until the coal is completely exhausted, the supply will probably not last one hundred years. He says, however: "The true life of our coal fields probably lies between these two extremes, and the probability is that it will be nearer 100 than 4,000 years."

Of equal significance is the increase in our per capita consumption of coal, shown by the following table:

	Short Tons	Percentage Increase
1870	0.96	....
1880	1.4	45.8
1890	2.3	64.1
1900	3.2	39.1
1915	5.5	71.9

*"The Coal Fields of the United States," United States Geological Survey Professional Paper 100-A.

Far more serious than the general drain upon all of the fuel resources of the country is the extravagant use of our highest grade material. The very best coal in the storehouse —the semi-bituminous of the eastern Appalachian field— amounts to a very small percentage of the coal resources, and it is this high-grade steaming coal that we are using with extravagant recklessness and without thought of the future. As E. W. Parker recently said in an address at The Franklin Institute: "We are rapidly consuming the cream and leaving the skimmed milk."

Before discussing the apparent coal shortage and serious fuel inconveniences of 1917, let us see what other natural fuel resources we possess.

In the swamps and bogs of the northeastern states, of the states near the Great Lakes, and along the south Atlantic coast, are large deposits of partially decomposed vegetable matter, or peat. Commercially dry, peat has a fuel value per pound equal to only about one-half the value of the higher grade coals, but nearly, if not quite, equal to the lower grade coals, or lignites. From the standpoint of by-products, peat, perhaps, offers a more enticing field than the majority of coals.

Peat has been used for centuries in Europe as a domestic fuel, but not until within the past decade has it reached any importance as a fuel for power plants in competition with coal and lignite. Although considerable peat is now mined in the British Isles, the greatest developments in the use of this fuel have been in Germany, Norway, Sweden, and Russia, the amount mined in Russia alone amounting to several million tons annually.

The estimated deposits of the United States amount to about 13,000,000,000 tons of air-dried peat. Although this amount seems small when compared with our coal and lignite deposits—amounting to only one-half of one per cent. of these deposits—yet the available amount is equal to the total tonnage of coal mined in this country in the past one hundred years. It should be noted that peat is found largely in states pos-

sessing no coal, which may prove an important factor in the ultimate solution of power distribution. Inasmuch as peat can be of no immediate service in our present fuel troubles, the discussion of this resource will be dismissed with the statement that within a comparatively few years peat will be highly valued in this country, not only as a fuel, but for other commercial purposes for which it seems admirably adapted and for which it is now being used in several European countries.

We are all so familiar with the demands for and the use of coal and see such extensive shipments moving in all directions as we travel that few of us appreciate the enormous value of two other fuel resources with which this country has been richly endowed—petroleum and natural gas.

An appreciation of the value of these products may be had from the following table of the value of the mineral products of the United States in 1913:

Coal	$760,000,000
Iron	458,000,000
Petroleum	237,000,000
Copper	190,000,000
Clay products	181,000,000
Cement	93,000,000
Gold	89,000,000
Natural gas	88,000,000
Stone	84,000,000
Silver	40,000,000
Lead	38,000,000
Zinc	38,000,000
All others	149,000,000

Third in the list stands petroleum, being surpassed only by coal and iron; and the annual value of natural gas is practically equal to that of gold.

These three products—coal, petroleum, and natural gas—make up nearly one-half the total value of all our mineral products.

Of course, petroleum has other important uses outside of its demand in the field of fuels.

The position of the United States in relation to the world's

production of petroleum is even more marked than its relation to the world's production of coal, nearly two-thirds of the total annual production of petroleum coming from this country.

World Production of Petroleum[1]

Country	Production in 1916 Barrels of 42 gallons	Production in 1916 Percentage of total	Total production from 1857 to 1916, inclusive Barrels of 42 gallons	Total production from 1857 to 1916, inclusive Percentage of total
United States	*300,767,158	65.29	3,917,328,402	60.46
Russia	† 72,801,110	15.81	1,763,583,017	27.22
Mexico	39,817,402	8.64	163,087,779	2.52
Dutch East Indies	‡ 13,174,399	2.86	162,174,312	2.50
Roumania	† 10,298,208	2.24	140,310,595	2.16
India	§ 8,228,571	1.79	89,820,956	1.39
Galicia	6,461,706	1.40	142,494,206	2.20
Japan and Formosa	2,997,178	.65	33,166,800	.51
Peru	2,550,645	.55	19,344,868	.30
Trinidad	§ 1,000,000	.22	3,819,430	.06
Germany	995,764	.22	14,957,097	.23
Argentina	870,000	.19	1,903,121	.03
Egypt	411,000	.09	1,759,936	.03
Canada	198,123	.04	23,907,197	.37
Italy	43,143	.01	397,000	0.2
Other countries	§ 25,000		889,513	
	460,639,407	100.00	6,478,944,229	100.00

A comparison of the production and value of the petroleum marketed in the United States in 1915 and 1916 shows:

	1915	1916	Per cent increase
Quantity (barrels of 42 gallons)	281,104,104	300,767,158	7.0
Average price per barrel	$0.638	$1.100	72.5
Total value	$179,462,890	$330,899,868	84.5

From the beginning of the petroleum industry in the United States to the close of 1917 this country produced approximately 4,250,000,000 barrels, or about 60 per cent. of the entire production of the world for this period.

[1] United States Geological Survey.
*Market production.
†Estimated in part.
‡Includes British Borneo.
§Estimated.

Is Our Fuel Supply Nearing Exhaustion

According to most careful estimates of the United States Geological Survey, the probable total original petroleum resources of the country amounted to over 11,000,000,000 barrels, of which the exhaustion to the close of 1915 amounted to over 3,600,000,000 barrels, leaving for possible future production about 68 per cent. of the original supply, or some 7,600,000,000 barrels.

If we assume a lake 100 feet deep and one mile wide, the length of the lake corresponding to the estimated total original petroleum resources would be over 22 miles. The exhaustion means that we have cut off more than 7 miles from the length of the lake and have left the equivalent of a lake 15 miles long, 1 mile wide, and 100 feet deep.

The petroleum fields of the United States are known as the Appalachian, the Lima-Indiana, the Illinois, the Kansas-Oklahoma, the North Texas, the Northwest Louisiana, the Gulf Coast, the Colorado, the Wyoming-Montana, and the California fields.

Although the draft upon some fields has been but a small percentage of the available resources, notably only 2 per cent. exhaustion for the Wyoming-Montana field and 8 per cent. for the North Texas field, and although the exhaustion for all fields combined amounts to 32 per cent., the proportion left in some fields is very small, the exhaustion of the Appalachian field having been 70 per cent. and of the Lima-Indiana field 93 per cent.

As in the case of the coal resources, the alarming point is the rapidly increasing rate of exhaustion, as shown by the following table:

Average Annual Production of Crude Petroleum in the United States, by Decades

Decade	Barrels (42 gallons)
1859-1867	2,200,000
1868-1877	7,700,000
1878-1887	24,500,000
1888-1897	48,600,000
1898-1907	97,900,000
1908-1917*	246,700,000

*Estimated for 1917 on basis of figures for first seven months of the year.

On the basis of a future constant consumption equal annually to the estimated 1917 consumption of 344,177,000 barrels, the estimated available reserves of 7,629,000,000 barrels would last only about twenty-two years, and with an increasing consumption rate per decade equal to from two to two and a half times the consumption for the preceding decade the depletion of our petroleum supply seems near at hand.

However, just as we become alarmed at the rapid exhaustion of our petroleum resources, information appears which indicates that there are wonderful mountains of oil-laden shales in the western states and similar shales in the east-central states, from which some 40 or 50 gallons of oil can be extracted per ton of shale. Similar processes have been carried on in Scotland for the past seventy years. The Colorado shales alone are estimated to contain some 20,000,000,000 to 30,000,000,000 barrels of oil, and for the Indiana shales estimates as high as 100,000,000,000 barrels of oil are reported. These figures indicate that our shale oil resources are enormously greater than our original petroleum resources.

There are two general uses of petroleum—for refining purposes and for fuel.

In 1915, 227,540,000 barrels, or 82.5 per cent. of all the petroleum marketed from the United States fields, went to the refineries and 48,860,000 barrels, or 17.5 per cent. of the total, were used for fuel.

In addition, some 16,000,000 barrels of crude oil were imported from Mexico, largely for fuel purposes.

In New England petroleum is gaining ground as a fuel for many industries and even for domestic heating. Its use in the industries in other sections of the country is well established.

The railroads are the largest consumers for fuel purposes, having consumed 36,648,000 barrels in 1915.

Its use as fuel in the navy amounted to 1,120,000 barrels for the fiscal year ending June 30, 1916, and the United States Geological Survey estimated the requirements of the navy for the fiscal year 1916-17 as at least 1,300,000 barrels.

Is Our Fuel Supply Nearing Exhaustion

Although gasoline is not one of our natural fuel resources, its importance as a fuel warrants a brief consideration of its value. The Census Bureau Press Bulletin, February 10, 1916, shows the total quantity of gasoline produced in the United States in 1914 to have been approximately 1,236,000,000 gallons, and for 1915 the United States Geological Survey states the quantity to have been 1,977,900,000, an increase of 60 per cent. Of this total gasoline production in 1915, approximately 96.5 per cent. was derived from crude petroleum, the remaining 3.5 per cent. coming from natural gas, but the quantity derived from natural gas is increasing very rapidly, having jumped from about 7,000,000 gallons in 1911 to 65,000,000 gallons in 1915.

Natural gas, an ideal fuel, is found in twenty-three states from New York to California and from Michigan to Louisiana. In spite of extravagant waste of hundreds of billions of cubit feet and the tremendous demands upon the original supply, resulting practically in the depletion of the supply in Pennsylvania, Ohio, Indiana, and some other localities, the production in 1915 amounted to 628,579,000,000 cubic feet. As stated by the United States Geological Survey,* "the magnitude of this output . . . can perhaps be comprehended more readily by a realization of the fact that a single gas holder large enough to contain it would be one mile in diameter and 5.4 miles high."

Unfortunately no definite information is available regarding the production of natural gas prior to 1906, as meters were not in general use before that date, the gas being sold at a flat rate per day or per month.

The approximate consumption from 1906 to 1915 is:

Year	Cubic feet
1906	389,000,000,000
1907	410,000,000,000
1908	405,000,000,000
1909	485,000,000,000
1910	510,000,000,000

*"Mineral Resources of the United States," 1915, Part II, p. 928, United States Geological Survey.

1911	515,000,000,000
1912	565,000,000,000
1913	583,000,000,000
1914	592,000,000,000
1915	629,000,000,000

The value of the 1882 production, the first for which any estimate is available, was $215,000, and that for 1915, $101,300,000, or 470 times that of only 33 years ago.

Of the 1915 production, 34.5 per cent. was consumed for domestic purposes by over 2,000,000 customers and 65.5 per cent. for industrial purposes by 18,000 customers.

Any estimate of the possible future supply of natural gas is perhaps more of a guess than a definite calculation.

Wyer states that the average life of wells in Ohio is less than five years.

As several of the old wells are already exhausted, and as others are showing signs of exhaustion, the conclusion is that the supply cannot be counted upon for long, even though new wells are located from time to time. According to some estimates, less than two decades will see the end of the natural gas supply.

Our natural forests once covered one billion acres of ground, and in the short life of this country we have, through indifference, greed, and ignorance, used or destroyed one-half of this magnificent original heritage.

The annual value of forest products is in the neighborhood of one and a half billion dollars, of which about one-fifth, or about $300,000,000, is for firewood.

The extent to which we use wood in this country is perhaps best shown by the fact that our per capita consumption is seven times that of Germany and ten times that of France. For years we have been cutting timber at a rate more than three times the rate of production.

As we have had some inconvenience—in some cases real hardship—during the past weeks because our immediate demands for fuel could not be met, many rumors regarding the failure of our fuel resources have been current and many

statements have been made regarding the failure of the mines to produce the needed coal supply.

Let us see just what the situation was at the beginning of 1917, or just prior to our entering the war.

The following points demand consideration:

1. As shown by the figures presented, we entered the year 1917 with

(*a*) enough coal to last at least a few hundred years;

(*b*) two-third of the original supply of petroleum;

(*c*) enough natural gas to meet the normal demand for from ten to twenty years, although failure of wells in certain districts—such as Ohio—has been most inopportune;

(*d*) one-half of all the wood of the original forests.

Our present fuel problem is, therefore, not one of lack of supply at the source, but one of production, transportation, and distribution.

For obvious reasons we in Philadelphia are not just now seriously concerned with the petroleum, natural gas, and wood problems, but the coal situation comes home to all and calls for our special consideration. The pinch has been so definitely felt that it hardly seems possible that only a little over a year ago the production was greater than the demand.

What has brought about this sudden change in conditions?

1. Interruption of normal ocean transportation. The failure of ocean transportation threw back on the terminals vast quantities of freight, which in turn tied up cars and blocked the freight yards. Without ample cars for delivering new coal, the reserve supplies were soon exhausted and could not be replenished with any degree of regularity.

2. Impossibility of storing bituminous coal at the mines. Because of its composition, bituminous coal cannot be stored in any large quantities, due to the danger of spontaneous combustion, but must be hauled from the mines as produced. With transportation cut off, production must cease. This is

not true with anthracite, and in 1916 the anthracite mines had millions of tons in storage, but the severe winter of 1916-17 seriously reduced this surplus. The spring of 1917 found us then with no reserve coal supply and with transportation seriously handicapped. Then came our entrance into the war.

3. Increased industrial demands. Although our fuel demands had been heavy prior to entering the war, the needs of the Government, of factories, and of munition plants became much more acute, many, eight-hour plants jumping to twenty-four-hour service, and all at a time when car shortage and crowded terminals made delivery of coal from the mines impossible.

A popular notion prevails that the production of coal for 1917 was below normal, and that our inconvenience and suffering have been due to a failure on the part of the mine operators and miners to produce a reasonable amount of coal. An examination of the United States Geological Survey reports covering the comparative total production of bituminous coal in 1916 and 1917 reveals the following fact:

	Short Tons		Per cent
	1916	1917	Increase
Total production of bituminous coal, January 1 to October 31 (10 months.....	413,492,984	454,326,059	10.0

This is an increase of 40,833,075 tons over the production in the corresponding months of 1916.

Similarly:

	Short Tons		Per cent
	1916	1917	Increase
Total production of anthracite, January 1 to September 30 (9 months).....	49,928,000	57,778,000	15.7

It should be noted that the year 1916 was a banner year for coal production in the United States, the bituminous coal output aggregating 502,500,000 tons. The bituminous production for 1917* has exceeded this amount by approximately 48,000,000 tons, or 9.5 per cent. Adding to this an estimated anthracite production of 90,000,000 tons for the year makes

*Estimated from eleven months' production (January 1 to November 30) of 502,100,000 tons.

the total for 1917 in the neighborhood of 640,000,000,† as compared with a total of 590,000,000 for 1916.

In spite of this increased output for 1917, a reported shortage of at least 50,000,000 tons has frequently been published. This shortage is charged to the unusual demands resulting from increased industrial activity due to the entrance of the United States into the war.

But why, with such wonderful fuel resources, should there be a shortage? It is apparent that there is plenty of available fuel in the ground. It is also apparent that, if the mines be worked to full-time capacity, the total production could easily be made 800,000,000 tons per year instead of 640,000,000 tons.

Why have we not had the full-time output of the mines? A brief examination of the weekly reports on the production of bituminous coal compiled by the United States Geological Survey reveals at a glance the following facts:

			Percentage of time lost on account of					
Week ending	Percentage of full time	Percentage time lost	Car shortage	Labor Shortage and strikes	Mine disability	No market	All other causes	No causes given
Oct. 20.....	65.8	34.2	11.5	15.1	2.6	...	0.1	4.9
Oct. 27.....	74.9	25.1	14.8	5.9	3.8	...	0.3	0.3
Nov. 3.....	75.4	24.6	14.5	5.7	3.6	...	0.3	0.5
Nov. 10.....	77.8	22.2	15.3	3.6	2.7	...	0.3	0.3
Nov. 17.....	75.3	24.7	19.4	2.7	2.2	...	0.1	0.3
Nov. 24.....	74.2	25.8	20.2	2.2	2.8	...	0.3	0.3
Dec. 1.....	74.8	25.2	18.6	2.6	4.5	...	0.2	0.3
Dec. 8.....	73.6	26.4	19.3	2.5	3.9	...	0.3	0.4
Dec. 15.....	57.7	42.3	30.8	3.7	6.2	...	0.9	0.7
Dec. 22.....	68.1	31.9	24.8	2.6	3.6	...	0.6	0.3

This table shows clearly an increased loss of time due to car shortage since October 20 and a marked decrease in loss of time due to labor shortage and strikes since the same date, and on December 8, C. E. Laesher, of the United States Geological Survey, writes: "It will be noted that losses due to lack of cars have been increasingly severe in the past month, rising from 11.5 per cent. in the week of October 20 to 14.8

†It is reported that Fuel Administrator Garfield estimates the 1917 production between 640,000,000 and 650,000,000 tons.

per cent. for October 27, 15.3 per cent. for November 10, 19.4 per cent. for November 17, 20.2 per cent. for the week ending November 24 Inadequate transportation facilities thus remain overwhelmingly the dominant factor limiting the output of soft coal."

Again, on December 22, he says: "A study of these bulletins will reveal that the dominant factor limiting production is lack of transportation. So long as the soft coal mines of the country are idle from one-seventh to one-fifth of the time because there are no cars at the tipple, more laborers could add but little to the output. It should, however, be remembered that the railroads are already carrying more coal than ever before in the history of the country. With one exception, the production of bituminous coal during the month of November was the largest in any one month in the history of bituminous coal mining in America."

What is to be done? The coal is in the ground. It must be mined, it must be transported, it must be distributed. The necessary and natural steps seem to be:

1. Government regulation of the transportation facilities. (At this writing, December 27, 1917, the papers announce the welcome news "Government to Run Railroads.")

2. Government regulation of the distributing agencies.

3. Government regulation of the coal mines and the labor necessary to insure production.

4. Unless the coöperation of all who operate plants—from the small household heater to the great central station—and of all who use heat, light, or power from central sources is secured for a more economical and more efficient use of fuel to bring the demand well within the reasonable productive possibilities of the mines and the transportation possibilities of the railroad and boat lines, then must follow a division of all demands into two classes, essential and non-essential—essential to the winning of the war and the vital welfare of the nation—with a positive restriction of supply to the non-

essential group, even to the point of prohibition, if necessary to the one purpose now before us.

To avoid the drastic action set forth in item 4 calls for active service on the part of all of us in one or more of the following fields: We should, without further delay

(*a*) See that all equipment used for developing heat, light, or power is in good condition—stop the leaks; repair the insulation.

(*b*) Use approved efficient methods of firing and operating —the majority of small plants are wofully inefficient.

(*c*) Use steam economically—eliminate the waste.

(*d*) Use electricity economically—eliminate all extravagance.

(*e*) Use gas economically—burn it only when needed.

(*f*) Use power generated by economical methods—shut down inefficient plants if power is available from more efficient and more economically operated plants.

(*g*) Confine the use of heat, light, and power to the dictates of reasonable comfort and real needs—eliminate luxuries, extravagant displays, and unnecessary service.

So bountiful has been our supply of fuel that we have in the past given little heed to the possibilities of the future, and our reckless waste and extravagance have been appalling. But now, at the first signs of the pinch of war, we are beginning to think—we have in a few months had a lesson in conservation which is a blessing in disguise. Let us see what our careless indifference has amounted to in the devastation of our fuel resources.

Defective mining methods have resulted in a loss varying from 50 to 150 per cent. of the coal production. Our general procedure has resulted in the flooding and caving in of mines from which only the better grades of coal have been taken, and the breaking up of the seams, thus making the removal of the coal by future generations not only expensive but so dangerous as to be prohibitive. Frequently 40 or more

per cent. of the coal in a given mine could never reach the market. Even if only one-half ton of coal is lost for each ton marketed, which is common mining practice today, this wastage for the year 1917 would amount to over 300,000,000 tons, which if piled as ordinarily piled in bins or bunkers would be equivalent to filling Franklin Field with a column six miles high.

Another extravagant neglect has been our failure to recover the by-products in many industrial uses of coal, as, for example, the use of the bee-hive coke oven, resulting in the annual loss of tens of millions of dollars.

Not only must we use our coal efficiently, but we must use grades not now considered commercially available—high ash fuels, bone coals, culm, slack, lignite, and peat. The efficient use of these fuels for producer gas manufacture has already been successfully demonstrated by the United States Bureau of Mines.

The necessity of petroleum in the successful prosecution of the war is imperative. Petroleum has become the principal fuel of the navies of the world. All recent orders for battleships and destroyers by our navy have specified oil as fuel. The lubricants derived from petroleum are essential to the efficient operation of all types of machinery. Gasoline is required for the operation of automobiles, motorcycles, auto trucks, airplanes, armored cars, and motor boats. Our extravagant use of gasoline should be checked not only now but for all time.

The United States Bureau of Mines puts the daily production of gasoline at 6,849,000 gallons and the daily careless waste through motor cars, due to leaky carburetors, motors running idle, waste in garages and through tank wagon losses at over 600,000 gallons per day, or nearly 10 per cent. of the total production. This waste is over 60 per cent. of the estimated war needs, which amount to 959,000 gallons daily, and the Bureau estimates that by a little caution on our part about using our pleasure cars needlessly we can save an additional one and three-fourths pints daily per car, or nearly 900,000

gallons, which if added to the 600,000 gallons now carelessly wasted makes 1,500,000 gallons daily, one and a half times our total war demand.

Our ruthless waste of our most perfect natural fuel is beyond all comprehension.

When natural gas was first used tremendous quantities were lost through inability to cope with the high pressures when the reservoirs were tapped. Vast quantities have been lost through the indifference of those interested in securing petroleum, but not concerned about natural gas, and the gas from the wells has been purged in order to get the oil. As great as have been the losses from these two sources, the really appalling loss has resulted from burning wells. Hundreds of millions of cubic feet have thus been destroyed daily. For twenty years one well blew forth wasted gas, the aggregate value of which was $3,000,000. As late as 1913, in the Oklahoma field alone, the yearly waste amounted to 100,000,000,000 cubic feet, and not ten years ago I. C. White, in speaking of the conditions in West Virginia, said: "At this very minute our unrivaled fuel is passing into the air from uncontrolled gas wells, from oil wells, from giant flambeaus, from leaking pipe lines, and the many other methods of waste at the rate of not less than 1,000,000,000 cubic feet daily, and probably more."

For years the waste was equal to the amount utilized, and frequently reached the equivalent of the loss annually of 20,000,000 tons of coal, or the destruction of a 38-ton car of coal every minute of every 24-hour day for the year.

The waste of our forest products that might be utilized for fuel is enormous. In the lumbering operations the loss is put at one-quarter of the timber cut, and at the mills at least another quarter of the original forest output is sacrificed, and by the time the lumber is in the finished product fully 60 per cent. of the forest growth has been ruined for commercial use. Some of this refuse is used for fuel, but a large portion is dissipated, and much is set on fire in order to get rid of it.

No doubt many of you have not forgotten the huge piles

of sawdust and edgings burning at the mills day and night throughout the year.

A second tremendous waste results from our turpentining methods. The life of the boxed trees is but a few years at most, and many are blown down and left to decay in the forest.

The third and most serious loss is due to forest fires, whose annual devastation has often amounted to fifty or more millions of dollars.

When our mineral fuel resources have been used they are gone forever. The supply is limited. We must reform. We must so discipline ourselves that we mine only such amounts as we really need and can efficiently use, and, to the end that these fuel resources be conserved to meet the needs of future generations, we must develop our water resources.

The surprising effect of hydro-electric power upon fuel conservation is shown by the recent electrification of portions of the Chicago, Milwaukee and St. Paul Railroad in Montana. Two divisions have been electrified, and a third will be in a few months.

As stated by the *Electrical Review,* October 20, 1917: "The conservation of 200,000 tons of coal and 800,000 barrels of oil per annum in the operation of about 725 miles of railway makes a considerable impression in the fuel supply problem. It is 18 per cent. of the fuel saving effected by the reduction of passenger train service on all the railroads of the United States for the year."

Besides the efficient operation of plants for the production of heat, light, and power, true conservation means that:

1. We must use efficient modern methods for mining coal.

2. We must recover the by-products from coal whenever possible, and eliminate extravagant methods of making coke.

3. We must use grades and kinds of coal not now regarded as commercially available.

4. We must not use petroleum as fuel when other satisfactory fuels or other economical sources of power are avail-

able, or we will deprive future generations of the valuable and necessary products derived from petroleum.

5. We must check the needless, thoughtless waste of gasoline.

6. We must check the useless flow of natural gas from the wells and the terrible destruction caused by burning wells.

7. We must reduce the waste in cutting timber and manufacturing lumber and must utilize the unavoidable waste for fuel.

8. We must reduce fire losses in our forests.

9. We must reforest large areas and must substitute other products for timber.

10. We must generate power close to the sources of supply—at the mines—transmitting electrical energy instead of transporting the coal.

11. We must take advantages of our wonderful water resources.

This war is a terrible thing, but through its many wholesome lessons we should be brought to a realization of our past ruthless waste and extravagance, and should for generations to come remember that fuel as well as food is essential to our welfare and protection. "Don't waste it."

WOLFRAM'S PARZIVAL AND WAGNER'S PARSIFAL

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Of all the many legends, romances and dramas connected with the Holy Grail two stand out preëminent because of the beauty of the language, the profundity of their thought and the loftiness of their conception, the one the *Parzival* of Wolfram von Eschenbach and the other the *Parsifal* of Richard Wagner—Wolfram a poet of the thirteenth century, a man of the Middle Ages with all the feelings and ideas of his time, Wagner a product of the riper civilization of the nineteenth century. Separated as they are by six hundred years they are nevertheless surprisingly alike in many respects, especially in their treatment of the problem. Both are less concerned in merely telling the story than in using it to convey truths of eternal value and to describe the religious struggles of mankind. Because of this resemblance it is interesting to compare the two poems and to discover how the attitude of the men of the Middle Ages differs from that of modern times. It is to this task that I wish to call your attention this afternoon.

Wolfram von Eschenbach is undoubtedly the greatest of all the Middle High German epic poets of that period of wonderful efflorescence of German poetry, when under the influence of the French and Provençal, the German poets vied with each other on the one hand in writing beautiful love poems, the so-called *Minnesong,* and on the other in creating magnificent courtly epics dealing with the adventures of gallant knights and fair ladies. Other writers of the time may surpass Wolfram in fluency and easy flow of the verse as does Gottfried von Strassburg, or in reproducing the atmosphere of chivalry and the details of the courtly life of the time, as does Hartman von Aue, but none equals him in the greatness of the conception, in skill of motivation and in depth of thought.

He is the philosopher among the Middle High German poets. He may at times indulge in detailed descriptions of combats and he may even depict erotic scenes, as do the others, but these are merely the outward embellishments of the poem. Beneath them all lies generally a problem of great weight and depth which he is trying to solve, a central thought that sustains and carries the whole. And yet with all his seriousness he has the saving grace of humor. He is ever ready for a jest and it is this delightful humor pervading his writings that renders even the driest passages palatable and enjoyable. He is the most modern of all the epic poets, for his problems have universal appeal and interest us quite as much as they did the men of the thirteenth century.

Of Wolfram's life we know very little save that he was a Bavarian nobleman and a knight born about 1150. He was probably poor and dependent as many other knightly poets on the favor of princes. At any rate he lived for a number of years at the court of the Landgrave Herman of Thuringia as depicted by Wagner in Tannhäuser. He died probably about 1220. Like most knights of his time he possessed very little education but had picked up a smattering of French and Latin. He makes fun himself of his knowledge of French, and it must have been slight to judge by the mistakes he makes, often taking simple French words of his source to be proper names. Every medieval poet was supposed to have a source and to follow it closely. Wolfram tells us that his source for Parzival was *Kyot* or in French *Guiot*. As no such version has ever been found and Wolfram's poem resembles the *Perceval* of the famous French poet Chretien de Troyes, it has been thought that Wolfram invented his source Kyot to give authority to his deviations from Chretien's work. In fact he was accused by his contemporaries of being an inventor of wild tales because his exact source was not known. Still his poem contains so much that is not found in Chretien, which he with his slight education could not have known or invented, that it is more than likely he did use a source resembling Chretien's work but not identical with it. Be that as it may,

it need not concern us greatly this afternoon, as we are interested in the story as given by Wolfram and not in its provenience.

Differing from Chretien, Wolfram begins his poem with the history of Parzival's parents, Gahmuret and Herzeloid, the only purpose of which is to explain how Parzival came by his half brother Feirefiz and why his mother withdrew with her child into the woods. We learn that in order to save her son from the fate of his father, whom desire for jousting led to an untimely death—Herzeloid brings up Parzival in the forest. In one of the most beautiful and romantic descriptions to be found in Middle High German poetry the poet introduces us to the charm of the woods, redolent with the perfume of flowers and melodious with the song of the birds whose sweet notes strangely touch the susceptible heart of the young lad.

The mother instills into her son's mind a certain amount of religious instruction. She tells him of a wonderfully bright and resplendent being brighter than the day who is God and of his opposite, a gloomy, faithless spirit whom he must flee. She warns him against the dangers of *zwifel* doubt, but the instruction is very vague and the boy's untutored mind has no correct conception of God. Then one day meeting a body of knights clad in shining armor, he takes one of their number to be God and falls upon his knees before him. When he learns that they are knights heredity asserts itself and he, too, desires to become a knight like them. The fear of his mother has become true, and like many another mother she finds it impossible to prevent her boy from setting out to make his fortune in the unknown world. She can only provide him with the necessary garments, in this case the clothes of a fool, that he may not be taken seriously and give him some rules of action. He must avoid dark paths and fords and choose the light ones, greet all persons whom he may meet, should willingly listen if a gray-haired man desires to teach him *zuht,* i. e., courtly etiquette. He must also try to gain the ring, greeting and kiss of good women. How little he appreciates

the meaning of the last piece of advice is evident when he finds the lady Jeschute resting in her tent and steals her ornaments and a kiss in spite of her protests and struggles. Had he suspected the harsh punishment which was to be visited upon Jeschute by her husband because of his visit he would never have entered her tent, for Parzival has a sympathetic heart in spite of his ignorance and lack of worldly wisdom. This is shown when he soon after meets his cousin Sigune mourning over the body of her dead lover. When he learns that the latter had been killed in a joust he is eager to avenge him and storms away despite her efforts to restrain him.

Sigune plays a most important part in Parzival's life. She takes the place of his mother who had died of a broken heart on his departure. She stays, to be sure, mostly in the background, but in every trouble Parzival finds his way to her and receives sympathy and advice. She plays the part of a sort of guiding divinity who helps him when he can go no further. Here, for example, he learns from her who he is, his name and his ancestry. Her motherly care is shown by her directing him falsely that he may not encounter the knight who slew her lover.

After a night spent at the house of a boor who only entertained him because he offered him the brooch taken from Jeschute, Parzival reaches the court of King Arthur. Here he is well received, but in his desire to obtain a proper costume kills the red knight Ither, whose messenger he had been. Donning the armor of the slain knight with the aid of the page Iwanet, who also teaches him how to use his weapons, Parzival rides away. Outwardly he is already a knight, but inwardly he is the same foolish lad. He needs instruction in knightly etiquette. For this purpose he comes to the castle of Gurnemanz, an old man who keeps him for weeks and completes his education. Mindful of his mother's admonition to heed the advice of an old man, Parzival willingly accepts the instructions, is taught good table manners and how to act in the presence of ladies, Gurnemanz's daughters serving as examples. He is taught to sympathize with other's sufferings

and to seek true love, but above all he is charged not to mention his mother at any time nor to ask too many questions. How fateful this last piece of advice was to prove to Parzival we shall see later.

With his education apparently complete Parzival sallies forth to test his prowess in combat. He comes to the land of Pelrapeire, where he finds the queen besieged by Clamide, who desires her hand. Mindful of Gurnemanz's advice to ask no questions, he hardly dares speak till Condwiramurs asks him about himself and requests his aid. Parzival consents, defeats Clamide and sends him on parole to King Arthur, and then amid the jubilation of the whole town marries Condwiramurs. Most knightly romances would end at this point, but Wolfram's epic has but just begun, because Parzival's training is only half complete—he must be educated into a Christian knight.

After living some time happily with his wife Parzival is driven forth by the desire to learn what had become of his mother and to do knightly deeds. One evening, looking for a place to spend the night, he comes to a lake where he finds a man richly clad, but sad of mien, fishing in a boat, and is directed by him to a castle near by. This is the rich fisher of the grail legends, King Anfortas, the guardian of the grail. Thus Parzival finds the mysterious temple, the goal of so many knights and there he is hospitably entertained. In the evening he is led into a large hall of unheard magnificence. Hundreds of lights shine upon four hundred knights seated at one hundred tables. A bloody lance is carried around by a page at which the whole assembly breaks forth into loud lamentations. Parzival does not suspect that this is the spear that has wounded the king and although he feels intense sympathy for the latter's sufferings and would like to inquire their cause, he feels compelled to follow Gurnemanz's instructions to the letter and therefore refrains from following the promptings of his heart. Then enter twenty-four beautifully clad maidens bearing vessels of balsam and finally Anfortas' sister carrying the precious grail which by its magic power provides each

knight with the food and drink he craves. Again Parzival asks no question, even when the king presents him with a sword. He retires to his room, and the next morning finds the castle deserted. His horse stands caparisoned awaiting him. He mounts and only the squire who lets down the drawbridge berates him for not asking a question which would have been of the greatest benefit to them all.

Why did Parzival not ask the question? Apparently because of too literally following Gurnemanz's advice; really, however, because he is not yet mature enough to become the guardian of the grail. He is not yet an independent character, he is still dependent on others. He follows Gurnemanz's advice to the smallest detail without stopping to inquire whether the particular act is in place or not. His innocence is as yet untried, his virtue is on that account negative. Moreover he has had no religious training. He has not been chastened by suffering nor strengthened by passing through religious doubts and struggles. He has not yet learned humility which is the essence of true Christian living.

After leaving the grail temple he once more meets Sigune, from whom he learns where he has been and the great happiness he has missed by failing to put the important question. Sadly he rides away. That this experience has made him more mindful of the sufferings of others is evident when he soon after meets Jeschute, whose nudity is scarcely covered by the rags and tatters she is forced to wear. Although not recognizing her at first he tenderly inquires the cause of her pitiable condition, offers her his cloak and later fights with her husband Orilus to prove her innocence. He even brings about a complete reconciliation between husband and wife by swearing his innocence at the cell of a hermit Trevizent, the brother of Anfortas.

After successfully withstanding a number of the knights of the round table who had been sent out to avenge the death of the red knight, his friend Gawan induces him to repair with him to King Arthur's court and become one of his knights.

Here he is received with glad acclaim and his killing of Ither forgiven because of his prowess since.

Parzival has now reached the summit of earthly renown and glory, for to become a knight of the round table was the proudest reward to which any knight could aspire. He is to learn, however, how vain is earthly glory. In the very hour of his triumph he is to receive the hardest blow that fate has had in store for him and is to ride away a disheartened and despairing man. The period of doubt is about to begin. The mysterious sorceress Cundrie, the messenger of the grail, suddenly appears in the midst of the splendid company and before them all she declares that the presence of Parzival is a disgrace to the round table. She curses him for his lack of pity in not asking the cause of Anfortas' wound and declares the omission to be irreparable, for now no one knows where the temple can be found. In despair Parzival rides away determined not to rest until he has made good his fault. But his faith in God is gone. Consternated he had listened to the torrent of abuse which Cundrie had poured forth upon him. He is conscious of no intentional guilt, for had he not followed Gurnemanz's advice to the letter? God can not be omnipotent or he would never have permitted such disgrace to come over him. On taking leave of Gawan he exclaims:

Woe is me! Who is He this mighty God?
Had he power our portion had ne'er been this shame abhorred!
Small power shall be His! I served Him from the day I first knew His grace,
Henceforth I renounce His service, doth He hate me, His hate I'll face!
And, friend in thine hour of peril, as thy shield may a wife's love stand!
Dost thou know her for pure and holy, then the thought of her guide thy hand,
And her love from all evil guard thee,—as I wish, may it be to thee,
For little I care of the future, if thy face I again may see!

Parzival's period of dependence is over. He has become a self-reliant man who, in proud consciousness of his own

strength, fondly imagines that he can dispense with the help of God. He is evidently not yet prepared to become the guardian of the grail, for he has yet to learn the most important of all lessons, that of Christian humility. In all his despair and doubt the only thing that sustains him is his love for his absent wife Condwiramurs. In touching contrast to his own misery he wishes for his friend Gawan the protecting influence of a pure woman's love. Sorrowfully he rides away and disappears for some time from view, the poet wisely recognizing that to make Parzival in his despair the hero of the following chapters would be a mistake. Nearly five years he wanders restlessly through the world and only when he emerges once more from his obscurity do we learn from the long list of kings he has conquered that he has not passed the time in idle remorse.

Parzival's place in the story is now taken by Gawan, the beau ideal of a worldly knight, brave, chivalrous, courteous to a fault, but not any too virtuous, quite as ready for a love adventure as for a duel at arms. During six long books, over a third of the poem, Gawan holds the field. To our modern ideas these adventures of Gawan destroy the unity of the work, but Wolfram wished to portray in Gawan the worldly counterpart of Parzival, a man whose striving is directed solely towards the achieving of worldly honors and who is not troubled by such doubts or scruples as is Parzival. To make the contrast complete Gawan, too, searches for the grail, but of course in vain. The sight of this precious relic of Christ's suffering was not granted to those intent only on worldly things. Such a one was not fitted to gaze upon the sacred mysteries of God.

In the Gawan episode the whole tone is lighter and more frivolous. Wolfram paints with more vivid colors and shows us what he can do in the domain of a courtly romance of chivalry pure and simple.

Only occasionally during the long interval occupied by Gawan do we hear of Parzival, but what little we do hear shows us that on all his wanderings two thoughts are upper-

most in his mind—the grail and his love for Condwiramurs. Finally, after five years of wandering, Parzival appears once more on the scene. God has at last taken pity on him and leads him to a hermit's cell where he again meets Sigune still mourning for her lover. At first she does not recognize him, but when she does she inquires eagerly about the grail, and her anger at him gives way to deep compassion when she sees how wretched and miserable he is. He tells her simply of his tireless search for the grail and his longing for his wife. Despairingly he stands before her and begs her aid in finding the grail. The five years of wandering have done their work, Parzival's proud spirit is broken. He has learned the needful lesson of humility. But one thing remains—his reconciliation to God. Sigune puts him on the track of Cundrie and he leaves her hopefully in the expectation of finding the grail. He soon loses the trail, however, and after defeating a knight of the grail who ventures to reprove him for riding in the sacred forest he continues his journey.

Finally one morning—it is Good Friday—he meets an old man with his wife and two daughters who are walking barefoot through the snow, clad in sack cloth. From the old man, Kahenis, a former knight, Parzival receives a severe censure that he should be riding thus armed on so holy a day. Parzival confesses he has no idea what day it is, for he has paid no attention to churchly things since he had turned away from God. With eloquent words the old knight depicts the sufferings of Christ and what he has done for humanity. He tells Parzival it is Good Friday, the day on which the Saviour died and that if he is not completely a heathen he should lay aside his armor and ride to the cell of a pious hermit and there confess his sins and receive absolution. Parzival rides away, pondering on the words of the old man and wondering if God might not help him after all. He concludes to make a trial. If God is powerful enough to guide horse and rider aright, he will believe in him once more. He therefore lets the reins lie idly on his horse's neck and permits the animal to wander

at will. Thus he is led to the cell of the hermit where he is to find peace of heart.

Fifteen days he tarries here with Trevizent, the brother of Anfortas, who tells him about the mysteries of the grail and of the knight that had come but had not put the question. Parzival acknowledges that he is the knight. He also learns of other sins he has committed, that Ither, whom he had slain, was a relative and that his mother had died of grief for him. Deeply conscious of his burden of sin and remorseful for his long estrangement from God, he confesses and receives absolution from the hermit and thus makes his peace with God.

The second period of Parzival's life is over, the third begins. With manly resolution he rides away to put into practice his newly-found faith. Two severe trials await him, a combat at arms with his dearest friend Gawan, and a still severer one with his half-brother Feirefiz. The fight with Gawan symbolizes the victory over worldly knighthood, that with Feirefiz the triumph over heathendom. Parzival's religious training is now complete. He is now worthy to become the guardian of the grail. To King Arthur's court, at which Parzival soon arrives with his friend, comes Cundrie, who had driven him away in disgrace, this time to invite him to go with her to the temple of the grail. For the grail had commanded him to come to heal Anfortas and become king in his stead. Joyfully Parzival sets out with her. Filled with the deepest sympathy at the sufferings of Anfortas, which have broken out with renewed violence, he puts the necessary question. Anfortas is cured and Parzival made king.

This great wish has been accomplished. Only one thing remains to complete his happiness—reunion with his beloved wife. To his great joy he learns that Condwiramurs, with her little son, is on her way to meet him. Hurrying forth he soon clasps her to his arms and the long years of trial and separation are forgotten. In his happiness his thoughts revert to his faithful helper and guide Sigune. She is found in her cell dead in an attitude of prayer. The poem then ends with the conversion of Feirefiz to Christianity and his marriage to

Anfortas's sister and with a brief account of Lohengrin, Parzival's son.

One sees there is no trait of asceticism in Wolfram's poem. Priests are not the guardians of the grail, but laymen with pure and sympathetic hearts. They are not compelled to live apart from the world; on the contrary, are permitted to marry and rear a family. In the older forms of the legend the ascetic element was more prominent. Galahad, *e. g.*, thinks only of the grail and his virtues are more negative than positive in character. In Wolfram we have, much as in Goethe's Faust, the gospel of work. Parzival does not sink into despairing inactivity because he loses his faith in God, but rides away to a life full of action and good deeds. Faust is saved at last by his continual striving; so, too, Parzival wastes no time in useless regrets, but works out his own salvation, as it were. The similarity between the two poems is made stronger by the fact that in both an important role is assigned to woman's love. Goethe's Faust ends with the words: *'Das Ewig-Weibliche zieht uns hinan'*—'The woman soul leads us upward and on.' Parzival is continually sustained and strengthened by thoughts of his wife and his longing for her.

Let us turn now to the consideration of Wagner's closely related drama. Wagner has been successful in reviving in the form of music dramas a number of medieval legends and poems where others had failed in the purely literary field. Beginning with the romanticists and the renewed interest in the German past, the attempts to work over such tales as the *Lay of the Nibelungs* and *Tristan and Isolde* have been very numerous. They were unsuccessful as a rule because of the difficulty of substituting for obsolete views of morality and tragic guilt more modern conceptions which would satisfy the reader of today. The epic form has proved itself on the whole best adapted to such revivals, as Jordan's *Nibelungenlied* and Immermann's *Tristan und Isolde* show. The task in the drama is much more difficult because the motivation must be subtler, more psychological, in other words more convincing. Wagner has succeeded better than others because in the opera we do

not demand the same degree of verisimilitude, the same accurate motivation as in the spoken drama. Through the music the story is transported to a sphere so romantic that the criteria of every-day life no longer apply.

Very few attempts have been made to revive the legend of the holy grail. Wagner's only predecessor of any note is the romanticist Immermann, who in 1832 published a voluminous trilogy *Merlin,* the central part of which was entitled *The Grail.* It is grand in plan, full of noble thoughts and poetic beauty, but nevertheless, as the author himself felt, is neither in a philosophical nor artistic sense a satisfactory revival of the old legend. It has therefore remained for Wagner, by means of the wonderful interaction of words and music, to endow the legend with new life and to make the story once more as familiar as it had been during the later Middle Ages. He did this by ridding the legend of its unnecessary complication and its multitude of characters, retaining only the real nucleus of the story.

Wagner possessed a remarkable talent for picking out the essential parts, for judiciously selecting the elements which would best harmonize and form a dramatic unity. He recognized at once that the court of King Arthur and the episodes dealing with the adventures of its knights do not form an integral part of the Parzival story and therefore eliminated them completely. He saw that the training of a simple lad into a devout Christian was the central idea, and this he has retained, although in a somewhat modified form. It is no longer a contrast between worldly and Christian knighthood, as in Wolfram. The age of chivalry is irrevocably past, its problems no longer possess living interest. The idea of knighthood is therefore relegated to the background and though Parzival appears in the third act of Wagner's drama in the costume of a knight, this is merely incidental and possesses no significance. Wagner has made the problem more general, namely, the education of a foolish lad into a man of sterling worth, a problem which will appeal to any age and time. Then, too, by deepening the religious fervor and introducing

Christian symbolism into the story Wagner has succeeded in making a modern work of the medieval legend. In fact, as we shall see later, Wagner goes so far in his symbolism as to make Parsifal a transparent type of Christ and the service of the grail the celebration of the Holy Communion.

Just as in the case of Gœthe with Faust, so Parsifal occupied Wagner off and on for the better part of his life, extending from 1845, when he first read Parzival, down to the completion of the work in 1882, a year before his death. In connection with Tannhäuser he became acquainted with Lohengrin, the son of Parzival, a knight of the holy grail. In Lohengrin, however, the grail plays but a slight rôle. We learn of it through the mysterious knight of the swan, who has come from the grail temple, but the grail itself remains in the nebulous distance. Wagner's interest in the grail did not abate as the years went on. In the original plan of Tristan in 1855 his idea was to have Parzival on his search for the grail appear at the side of the dying Tristan, but he later discarded the episode as destroying the unity.

It was on a beautiful day of the spring of 1857, when Wagner stood gazing from a villa on the shores of the lake of Zürich out over the sunny landscape redolent with the perfume of spring flowers and vocal with the songs of the birds, that the thought of *Parsifal* first appeared to him as a revelation. It flashed over his mind that it was Good Friday and he recalled the admonition of the old knight to Parzival in Wolfram's poem not to bear weapons on the day the Lord had died. The magic of the Good Friday spell entered his heart and starting with this as a central idea he rapidly sketched the plan of a drama in three acts. In letters to friends we can trace how the characters are gradually taking shape in the following years. In 1865 he writes out a detailed prose sketch at the request of King Ludwig, but it was not until after the completion of the *"Ring"* in the summer of 1876 that he returned to his Parsifal. He wrote the text in the following winter and it appeared in book form Christmas, 1877.

The composition of the music, however, proceeded very slowly, often interrupted by sickness and other work. Not until January, 1882, was the full orchestral score finally completed and the work then performed at Bayreuth for the first time July 26th, 1882, and then fifteen times in rapid succession up to the end of August, forming the most brilliant triumph of Wagner's life.

Wagner's main source for his drama was Wolfram's poem which he read partly perhaps in the original, but principally in the translation of Simrock or San Marte. The idea of the flower girls who meet Parsifal on his entrance into Klingsor's garden was taken partly from the *Lay of Alexander* and partly from the legend of *Buddha* which Wagner had been thinking of using for a drama to be entitled *The Victors*. In the story of Buddha the beautiful daughters of Mara try by their charms to seduce the young prince who is striving towards salvation through *pity* and *knowledge*, the very words *durch Mitleid wissend*, 'enlightened by pity,' that play so important a rôle in Wagner's work. A special contribution of Wagner's to the story is the character of Klingsor, the evil magician, the enemy of the knights of the grail. In Wolfram's poem Clinschor, as he is there called, is the lord of a magic castle where innocent women are imprisoned, whom Gawan liberates, but he himself plays almost no rôle. Wolfram tells us, to be sure, that Clinschor had been deprived of his manhood as a punishment for adultery. Wagner brings this *motif* into close relation to the main story by depicting Klingsor as striving after the grail with an impure heart and performing the operation on himself in the hope of winning the grail by this ignominious sacrifice. The idea of making Klingsor the tempter of Parisfal's virtue came to Wagner probably from some of the later French versions to which his attention was called by friends.

The character of Kundry, the mysterious witch-like messenger of the grail is Wagner's most important contribution to the Parsifal story. Like several of the other characters she unites in one, two or three persons of Wolfram's poem.

From the grail messenger of Wolfram she has borrowed little but the name and the ugliness which, however, in Wagner appears more in the form of wildness. For the other half of her dual personality the haughty beauty Orgeuleuse, to whom every one but Parzival succumbed, has served as a model. In Wolfram, Orgeuleuse stands in relation to Clinschor, so also Kundry in Wagner. Here, however, she is his slave who is thrown by him into a sort of hypnotic trance, transformed into a vision of loveliness and used to seduce unwary knights. In Wolfram, Orgeuleuse was a former love of Anfortas, so in Wagner Amfortas is depicted as having yielded to her charms and thus losing the holy spear and being wounded by it. To a certain extent Kundry also represents Sigune of Wolfram's poem, as it is she who informs Parsifal of his name and of the death of his mother. To a certain extent she is a re-embodiment of the legend of the Wandering Jew, for she tells how she had laughed at the Saviour in his sufferings and as a punishment was condemned to wander restlessly over the face of the earth. In Wagner she also represents sinful passion. In her better moods she is the faithful servant of the grail, going even to Arabia in search of remedies to relieve Amfortas' suffering, but with all her fidelity, ill tempered and disagreeable. Under the influence of Klingsor she is compelled, in spite of herself, to give way to her passions and to seduce men. She adds greatly to the dramatic interest of the struggle in Parsifal and gives the dramatist an opportunity to depict a scene which strongly appeals to the hearts of the auditors. In the temptation of Parsifal by Kundry, Wagner stands nearer to the ascetic French versions than to Wolfram. In the latter Parsifal is married and through his love for his wife is immune from the charms of other women. In Wagner Parsifal has no such talisman, but is saved by his ignorance and inexperience. But let us turn to the drama itself.

The deeply religious character of Wagner's work is shown at once in the opening scene by the solemn call to prayer. Gurnemanz and his attendant squires awake from their slumbers and perform their morning devotions. In Gurnemanz,

Wagner has united three characters of Wolfram's poem, first Gurnemanz of Graharz, who gives Parzival instruction in knightly etiquette; second, the pilgrim knight Kahenis, who reproves Parzival on Good Friday; third, the hermit Trevizent who gives Parzival religious instruction. The union of these three characters is of advantage to the drama as it makes for simplicity and unity.

From Gurnemanz's narration to the squires we learn of the earlier history of the grail. The castle *Monsalvat* ('the mount of healing'), instead of Wolfram's *Monsalväsch* (i. e., *Mont Sauvage*) is located in the mountains of northern Spain (in Wolfram in northern France). Here the Holy Grail, the cup of the Lord's Supper and the spear used to pierce the side of the Saviour are guarded by the Order of the Knights of the Grail, presided over by their king Amfortas (Anfortas in Wolfram. Why Wagner made the change we do not know). We learn how he has succumbed to the charms of Kundry when on an expedition against Klingsor. The latter, furious at the refusal of Amfortas to admit him into the order, had erected a magic garden in the valley below the mount. Amfortas who, as we have seen, has been wounded by the spear of which Klingsor had deprived him, can be relieved by no remedy of his sufferings. The oracle of the Grail, however, has declared that the wound may be healed through a pure fool, wise through suffering:

Durch Mitleid wissend	By pity 'lightened,
Der reine Thor	My guileless one,—
Harre sein,	Wait for him,
Den ich erkor.	Till my will is done!

This is the keynote of the whole poem. Starting with Görres' mistaken derivation of the names Parzival from the Arabic *Parsi-fal,* supposed to mean "a pure fool," Wagner changed the spelling accordingly and built up his conception of his hero.

He obtained the idea of *Mitleid,* "pity," as the motive for the fateful question from Wolfram where it is clearly ex-

pressed, and then developed it under the influence of Schopenhauer's philosophy. It is Schopenhauer's principle of the renunciation of the will to live, *i. e.,* the sacrifice of self for others. Sympathy, according to Schopenhauer, alleviates suffering, while asceticism does away with it by the negation of the sensual nature in man, by destroying the will to live in the midst of life.

When Gurnemanz has finished his tale, Kundry, a wild, fantastic creature, breaks in on the scene carrying a flask of healing balsam from Arabia. Soon the knights are seen bringing Amfortas down to the lake for his morning bath after a night of pain. Suddenly one of a flock of swans that Amfortas has been watching, falls pierced by an arrow and Parsifal rushes in in great glee at the success of his shot. This is a crime, for the birds are sacred and belong to the grail. The substitution of swans for the doves of Wolfram is due to the Lohengrin legend. The whole scene reminds us of the one in Wolfram where Parzival shot the song birds. Here, as there, when charged with the crime, he breaks his bow in remorse and throws away his quiver. This is the first quickening stir of pity, but not yet developed into sympathy. To all the questions of Gurnemanz as to who he is, he can give no answer and it is finally Kundry who furnishes the desired information. Enraged at the news she tells of his mother's death, Parsifal springs at Kundry's throat and is with difficulty restrained from doing her harm. Kundry now sinks into a deep slumber and Gurnemanz, thinking that Parsifal is the promised deliverer, invites him to witness the feast of the grail. How different is this from Wolfram's account where Parzival arrives at the grail only after a long period of training, a full-fledged knight, with many deeds of prowess to his credit. For the sake of greater simplicity Wagner has omitted all the manifold adventures and instruction which we read of in Wolfram's work. The character of Parsifal has, however, suffered by the change.

All these doubts, however, disappear before the superlative beauty of the scene and of the music to the accompaniment

of which the feast of the Holy Grail is unfolded before our eyes. In the dim religious light filtering through the windows of this wonderful temple, while the grail *motif* rises higher and higher sung by an unseen choir, the knights and squires march in before the astonished gaze of Parsifal. The grail is brought in and placed before Amfortas, who at first hesitates to unveil it, as its sight brings him increased suffering. Finally urged by his father Titurel, who is preserved alive by the sight of the grail, he removes the cover. A dazzling beam of light falls from above upon the sacred vessel, causing it to glow like a ruby. Amfortas seizes it and waves it back and forth, while all the knights fall upon their knees in silent adoration. Out of the scene in Wolfram, where the lance overshadows the grail in importance, the knights kneeling while it is carried around, the grail possessing more of a social character, has grown under Wagner's shaping hand a regular *Agape* or love feast, practically the celebration of the Lord's Supper. The words used during the ceremony permit of no doubt as to the character of the scene:

Take ye, and drink My blood,
  In vow no death can sever!
Take ye, My body eat,
  In love to live forever!
Remember ye My life and love
And raise your hearts to Me above!

Upon Parsifal, who has witnessed the scene, the ceremony seems to have made no impression. He shows no signs of comprehension, and Gurnemanz in disgust drives him from the temple.

Wagner's drama consists of three dramatic pictures. The second, comprising the second act, shows us Parsifal in temptation. Instead of the long years of trial as in Wolfram, we have here a short, decisive struggle from which Parsifal emerges triumphant. This condensation makes the story more dramatic, but whether it renders the character of Parsifal as strong and steadfast and whether the whole proceeding is as natural, is a fair question.

Parsifal is to pass through the same temptation as that to which Amfortas succumbed. The idea of celibacy so prominent in the French versions is here revived—purity, chastity is the crown of all virtues. But in reality Parsifal is not a whit purer than when married as in Wolfram where his pure love for his wife renders him immune to all sinful passion.

Klingsor, the enemy of the grail, recognizing in Parsifal a foe, lures him to his castle, where he first has to undergo a combat with several armed men. Successful in this he is next met by a bevy of flower maidens who, to the strains of a wonderfully beautiful melody, perform an intoxicating dance around the astonished youth. "Come, play with us," they exclaim:

"We are thy fragrant flowers,
Blooming alone for thee,
And full of love's own bliss
And life's deep mystery!

"Come kiss our rosy lips,
For thou our lover art;
And taste the nectar sweet
Of nature's secret heart."

At first allured, then bored by their antics which he does not understand Parsifal is about to turn away when a voice cries, "O, tarry, Parsifal!" Parsifal! the name recalls to him memories of his mother and he willingly submits to the embraces of Kundry, which remind him at first of his mother's caresses, till Kundry, feeling sure of her triumph, presses upon his lips a kiss of passionate love. That was not such a kiss as his mother used to give him. It thrills him the first instant with terror, the second instant it raises his blood to fever heat and arouses all the slumbering passions within him. A wild sensual desire seizes upon him, but at the moment of greatest danger Parsifal becomes *hellsichtig,* "clairvoyant," as Wagner puts it. The torments of love arouse in him an understanding of the sin and suffering of Amfortas. He too, is suffering the same; through this suffering he becomes

wise, *durch Mitleid wissend,* "through pity 'lightened." He understands what he should have felt at the sight of Amfortas' suffering and a desire to alleviate the torments of the latter takes possession of him, a desire so strong that it quenches all sensual passion. He recognizes his own danger and in disgust he repels Kundry and escapes from her embraces. Triumphant in this struggle he is invulnerable to all other arts of Klingsor and the spear, which the latter hurls at him in a rage, remains hovering in the air above his head. It is the spear with which Klingsor had wounded Amfortas. Seizing it in his hand Parsifal makes with it the sign of the cross and the magic castle falls in ruins. Towards Kundry he feels only pity and the desire to save her from her sins leads him to say:

"Eternally wouldst thou be damned with me
For one hour's forgetting of my mission
In the embraces of thine arms.
* * * * * * *
Love and redemption shall await thee,
If to Amfortas thou dost point the way."

In a rage Kundry curses him, so that he is compelled to wander long before finding the way to the grail. With the words "Thou knowest where we meet again!" Parsifal departs.

In the third act the curtain rises on the last dramatic picture in Parsifal's life. It is Good Friday. Nature has just awakened under the magic kiss of spring and seems awaiting the approach of her Lord. The beautiful melody of the Good Friday Spell, played softly by the stringed instruments of the orchestra, heightens the charm of the scene. In the cell of the aged Gurnemanz we learn that Amfortas, shrinking from the suffering which the sight of the grail renewed, has refused to unveil the sacred vessel. The brotherhood, deprived of their mystic food, are becoming weaker. The aged Titurel has died and Gurnemanz has withdrawn to this hermitage. First Kundry appears in the garb of a penitent. She has learned that the highest love consists of service. She has

come to finish her life in the service of Him whom she had laughed to scorn and against Whom she had sinned.

Parsifal, now grown to manhood, appears clad in armor, ignorant of what day it is. The scene follows Wolfram closely as Parsifal receives instruction at the hands of the aged hermit. But under our very eyes he gradually seems to become a transparent type of the Saviour of mankind. As Kundry kneels before him anointing his feet with oil and drying them with the hairs of her head, the thought flashes over us as a revelation that this is the penitent Mary Magdalen at the feet of her Redeemer. In fact, Wagner has made use of the idea of an earlier dramatic fragment, *Jesus of Nazareth,* written in 1848, but not published till after his death. Kundry is here the representative of sinful humanity finding forgiveness for its sins at the feet of Christ. Of course, this must be understood as symbolism, and Wagner must not be thought of as introducing Christ upon the stage. Parsifal stands here in his stead anointed with oil and hailed as the God-elected king. Exercising his sacred office, Parsifal moistens the head of Kundry with water from the holy spring, saying: "Receive this baptism and believe on thy Redeemer."

> And in a passion of rejoicing tears
> She kneeled there and her voice gave praise to God.

Suddenly the solemn *motif* of the temple bells, swelling louder and louder, strikes our ears and Gurnemanz remarks: "The hour has come! Permit me now to lead thee to the Grail!" The scene changes; we are transported within the temple and are spectators of the funeral rites of Titurel. The knights demand the unveiling of the grail. Amfortas refuses, renounces his office and begs for death at their hands. But Parsifal interposes and touching Amfortas' wound with the spear, exclaims: "Be healed and freed from sin, for thine office now I take. Blessed be thy suffering which gave pity and the power of purest knowledge to the timid fool. The holy spear I bring it back."

The grail is unveiled, it glows blood red and a transfiguring

light illuminates the scene. A white dove descends from the dome and hovers over Parsifal's head while Kundry falls lifeless at his feet. Titurel, restored to life for a moment, raises his hands in benediction and from the unseen choir above we hear softly sung the words:

"Highest wonder! blest salvation!
Praise the Lord for our redemption!"

The curtain falls upon one of the most unique works that ever issued from the pen of man. Regarded merely as a drama, the structure seems at places faulty and the development incomplete, but we must remember that Wagner's dramas were created to be recited and sung, not read. We have no right to judge them merely from the standpoint of literature. Wagner is the creator of a new species of art, the musical drama, in which the music plays an essential part in the characterization of the persons. Many have objected to the representation of so sacred a ceremony as the Lord's Supper upon the stage, even symbolically. Such critics should remember that Parsifal was not written as Wagner's other dramas for the stage, but solely as a festival play for the dedication of the hall in Bayreuth, built for the performance of Wagner's musical dramas, and that it was Wagner's express wish that it should be given only in Bayreuth and not "desecrated" on any other stage. It seems to me that Wagner's wish should be respected as far as possible. If it is thought wise to give the world at large an opportunity of witnessing a performance of Parsifal it should be regarded as belonging to the category of the old mysteries and miracle plays or as a sacred oratorio and should be performed but rarely, and then under circumstances which would guarantee the solemnity of the performance and silence the suspicion that it is a travesty of the sacred rites of the Christian religion, which Wagner certainly did not intend it to be.

On the contrary, Wagner used the symbolism of the Christian religion to beautify the story and to make it more spiritual. He believed firmly that there was a close connection between

art and religion. In his closing years he wrote that art by ideally representing the symbols of religion should strive to make known the deep hidden truth of these symbols.

When we compare Wolfram's *Parzival* and Wagner's *Parsifal* we recognize that each is a typical representative of its age. Each period has its own problems and ideals. In the time of chivalry the problem was to make a Christian knight out of a foolish lad. In our age the problem has become more general, namely, the training of an untried lad through temptation and through sympathy with others' sufferings into a self-reliant but also sympathetic man. The grail is only a symbol of that purity and nobility towards which all of us must strive.

RUSSIA AND THE REVOLUTION

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The irony of fate has decreed that Russia, the first of the allied countries to engage in the great war, should also be the first to withdraw from it. She entered the struggle as an imperialistic autocracy, and emerged as a proletariate republic. Demoralized Bolshevist Russia has pushed aside despotic Romanov Russia; abandoned the cause of the allies, and concluded a separate peace. For the time being, the Russian seems to have lost his power to think and act in terms of nationalism. International relations have been relegated to the background, while the question of land distribution, control of the means of production, and rule by the masses have usurped the stage. In the midst of the greatest war of history the Russians have turned aside to problems of political and social reconstruction, and the pursuit of a visionary "internationalism." This defection is not only entailing enormous additional sacrifices in the struggle against the menace of Prussian militarism, but causing an unexpected prolongation of the war through the opening up of opportunities for the economic recuperation of the Central Powers in eastern Europe.

Determined to protect Serbia from becoming a vassal of Austria-Hungary, Russia insisted on a revision of the terms of the Austrian ultimatum of July, 1914. She refused to accept Germany's subtile suggestion that the Serbian question be localized, and boldly announced it to be impossible, both politically and morally, for Russia to allow Serbia to be crushed. "She would mobilize on the day Austria crossed the Serbian frontier."

More than any of the allied powers, Russia was interested in the preservation of Serbian autonomy. Her people possessed a kinship in race and religion with the Serb, that en-

gendered a strong fellow-feeling throughout Russia for the ambitions of the little people. Pan-Slavism made the Balkan question an integral part of Russia's foreign policy. Russian geography made the destiny of Constantinople peculiarly a Russian question. The fact that four-fifths of the wealth of European Russia lies in what may be called the Volga and Black Sea basin, made a free outlet through the Dardanelles an economic necessity. But it was precisely in the Balkans that the economic penetration by the Central Powers so seriously menaced Russia's position, while at Constantinople German influence and the concessions associated with the Bagdad Railway cut squarely across the line of her economic and imperialistic interests. The people were, therefore, enthusiastically in accord with the government when the fateful declaration of war succeeded mobilization orders early in August, 1914.

That was the old Russia, the Russia of Tsardom, of the Orthodox church and Pan-Slavism; patriotic Russia, eager to impress the stamp of Russian nationalism on the subject nationalities; imperial Russia, with grandiose dreams of dominion at Constantinople and the Far East, with enormous territories and untold resources; the Russia universally regarded as the country with greater potentiality for the twentieth century than any other in the world. With a population of 180 millions, possessing enormous wealth and unequalled supplies of foodstuffs, Russia was properly regarded as the anchor man in the colossal tug-of-war. That she would pull hard was assured because she was pulling for interests of vital importance to herself.

Fortunately for Russia, the fear of the "Slavic-peril," of which Germans have made so much, was of such slight concern to her military leaders that only very insignificant forces were left on the east front to face it. This gave Russia a glorious opportunity to aid the cause of the Allies. By unexpected rapidity in carrying out her mobilization, she surprised the Germans, invaded East Prussia and actually threatened the railway communications at Thorn a week or so before

the battle of the Marne. In alarm, the German General Staff recalled half-a-dozen army corps from the west to stem the tide of Slavic invasion on the east—a weakening of Von Kluck's army said to have contributed seriously to his defeat on the Marne. On her part, Russia paid dearly for her temerity. Von Hindenburg was placed in command of the German forces, and in a short campaign he practically annihilated two of her armies among the Masurian Lakes, and forced the remnant back into Russia.

Elsewhere, however, the Russian armies not only held firm, but in Galicia they pushed the Austrians steadily and victoriously back. Lemberg fell, Western Galicia was gradually conquered, and in the late autumn and winter the Carpathian passes were seized. Russia held the key positions and her troops were preparing for the invasion of Hungary in the spring of 1915. The Russian *steam roller* had done remarkable work. It seemed irresistible.

Then the unexpected happened! Von Mackensen began his terrific drive eastward from Cracow along the base of the Carpathians. By "sledge hammer" blows, delivered with the aid of tremendously superior artillery, he literally pounded his way through the Russian positions in a straight line to Lemberg, and beyond. This did what all the heavy fighting in frontal attacks by the Germans on the Warsaw front had been unable to do. It dislodged the Grand Duke in Poland by threatening his lines of communication—the railways on which the life of his armies depended. He had to evacuate the territory without striking a blow. The entire battle line —the longest in history—had to be abandoned, and a general retreat effected.

The stupendous task was successfully accomplished. It involved not only an army of between three and four millions, but the withdrawal of a civilian population estimated at from seven to nine millions. Of all the tasks of the war, this was one of the most colossal. Russia was obliged to look after the needs not merely of a defeated and retreating army, by the side of which Napoleon's great invading host of

1812 was insignificant, but it had to care for and distribute a fugitive population the size of that of Belgium, or of the state of Pennsylvania. The work was accomplished by the superhuman efforts of the local Zemstvo and Dumas, aided somewhat by the government. The latter's assistance, however, was sporadic and often ineffective. Indeed, it began to be rumored that the government, instead of helping to the fullest extent of its power, was actually interfering and impeding the work.

Amid the confusion and anarchy that followed, it was scarcely to be expected that Russia should be deeply aroused by the results of her disastrous defeat upon her interests in the Balkans. Back of the Russian lines, politically speaking, lay the Balkans, especially Bulgaria. Germany's victory over Russia served as a determining factor in the final decision of Bulgaria to throw in her lot with the Central Powers. This at once made the position of Serbia, from a military point of view, untenable unless promptly reinforced by her allies. As this was not done, she was quickly crushed between the frontal attacks of Von Mackensen from the north, and the flanking operations of the Bulgars from the east. The road to Constantinople was opened, and the much coveted highway linking Central Europe with Mesopotamia came into German hands. In former days this would have aroused Russian imperialists and Pan-Slavists to extend their fighting power to the utmost. In 1916 it called forth no national protest; no crusade on behalf of brother Slavs and fellow-Christians of the Orthodox faith. The reasons are not far to seek.

Difficulties nearer home gripped the attention of every Russian. Ominous rumors of treason in high places, combined with the break-down of the army, disaffected all classes of the people. Sinister pro-German influences seemed to dominate the court. The machinations of Rasputin, Strumer and others; talk of a separate peace, and the severe shortage of food brought matters to a crisis.

The story of the revolution in Petrograd, in March, 1917, is well known. Conspicuous among the facts of the revolu-

tion was the defection of the army. Having undergone a complete renewal in the war, the army of 1917 differed radically from the army of the revolution of 1905 and of Red Sunday. The old army was in German prison camps or under the ground. The new army consisted for the most part of peasants and workmen recruited since the war, and in sympathy with the people. As a result Russian autocracy found itself without its usual support. It fell like a dead tree!

Nicholas II. was at the front, keeping as far away from trouble as he well could. He relied on the assurances of his minions that the revolution, like so many others, would blow over. When, therefore, the real situation was brought home to him, and he realized that the soldiers, even to the guard regiments at Tsarskoi Zelo, had joined the revolution, he weakly succumbed to circumstances. He had never done anything else! At noon, on the 15th day of March, in the dining car of his private railway carriage, Nicholas II., the last of the Romanovs, handed the deputies sent to him by the Duma, several small sheets of paper on which he had written his abdication. He had gambled away an imperial sceptre of unparalleled power by his connivance at the treasonable dealings with the enemies of Russia, and by his playing with the spirit of progress, as if it were a bauble to amuse the scions of royalty.

A provisional government was at once set up, which properly regarded itself as the custodian of the will of the people. It was composed mainly of Cadets, that is, constitutional democrats, representatives of the middle class, who, if they had had their way, would have preferred a constitutional monarchy. Prince Lvov was prime minister, Milyukov, the brilliant writer and scholar, minister of foreign affairs. Only one member of the cabinet, Kerensky, represented the masses. He was an extraordinary young man of 37, of obscure origin, who had come into prominence in the revolution of 1905 and later as a socialistic lawyer. During the days of the revolution he had won great popularity by his radical speeches. On one occasion his words, "Comrades, we are here to swear

that Russia shall be free," were taken up by the crowd and, with the voice of the multitude, literally thousands of right hands went up in the air to the words "We swear," while a still mightier ovation greeted his concluding statement: "Long live the free citizenship of free Russia."

It soon appeared, however, that in the selection of the members of the provisional government the Duma had failed to take sufficient account of this *free* citizenship of *free* Russia. They demanded more voice in the government, and being well organized in their *soviets,* or councils of soldiers and workingmen, they were in a position to direct the great physical power of the mob. The provisional government did everything in its power to satisfy them. It scrupulously avoided everything that savored of the old regime. Even the language of the old order was carefully stricken from the proclamations of the new government; such words as "authority," "law," "coersion," etc., were sedulously avoided, and the death penalty was abolished. But the populace demanded more. Looking upon itself as the real hero of the revolution, the proletariat—the soldiers and workmen of Petrograd—claimed that having destroyed the old régime, they were entitled to direct the affairs of the new state. One by one the Cadets were crowded out of the ministry, pushed aside, to make room for revolutionary socialists. Then under the pressure of internal disorders and danger from the enemy on the front, Kerensky was made dictator.

Kerensky stood for a compromise between the extreme demands of the radical revolutionists and the nationalists. It was hoped that he would bring Russia up sharp into the battle line of the Allies. He was hailed as the *Slav Cromwell, a new and greater Napoleon!* What the history of Russia and Europe would have been had a really great military genius appeared as a dictator among the Eastern Slavs before the Bolshevists had completely disintegrated the Russian military forces, is interesting food for speculation.

But Kerensky was neither a Cromwell nor a Napoleon. He belongs rather to the type of French revolutionists known as

Girondists. An idealist with some oratorical power, Kerensky, like the man of the Gironde, lacked even the willingness of Robespierre to strike when he had the power. He was less of the mountain than he was of the Gironde—a dreamer of dreams, and a weaver of words; an idealist, over-optimistic in his faith in the goodness of the Russian people. As he himself put it, he wished to regard them all as *conscious free* Russian citizens. Against such a people the use of force was unnecessary and unwarranted. Therefore, force, coercion and authority were all abolished as characteristics of the old order.

Whatever these theories might develop among a civilian population in time of peace, in time of war they would, by their very nature, bring disorganization and ruin, especially in the army. With the removal of the death penalty and the permission of soldiers to criticize their officers, came the end of all discipline in the Russian military establishment. *A charter of the soldiers' liberties* was promulgated—note, it says *liberties,* not *duties.* The soldiers began to disobey their officers, set up their own authority, or desert. The army disintegrated, hundreds of thousands flinging away their rifles and starting for home, or for the cities—to swell the ranks of the turbulent masses. In a speech delivered in Petrograd at this time, the assistant minister of war said: "That, although he did not remember the precise figures, he knew that runaways from the army numbered several millions." Think of it! Several millions of deserters, who, in turn, all became ardent advocates of peace. Russia, as a military factor, shrank to a shadow of her former self.

The military leaders were in despair. Upon the urgent representations of the general staff, the Moscow congress endorsed a plan of restoring discipline. The Cossacks pledged their support, and, under the direction of the generalissimo, Kornilov, the task was begun. Cossack and other loyal regiments were carefully distributed throughout the army. Troops refusing to obey orders and return to the former discipline were summarily dealt with. One effective, though gruesome,

method being to form them into hollow squares and march them for an entire day before the other troops till sun down, when they were shot. On their part the rebellious soldiers would shout defiance and threats at the officers, and sing the Marseillaise till their voices failed them.

With the army at the front, these efforts were fairly successful, but the difficulty lay with the millions of soldiers back of the line, in the provinces and the cities, where the influence of the *soviets* was supreme. To deal with this situation Kerensky, Kornilov and others, in a meeting at general headquarters, agreed on the plan to get rid of the dominance of the *soviets,* and establish a dictatorship of five men. When everything was arranged, Kornilov moved on Petrograd. Then like a bolt out of the blue came Kerensky's defection, his denunciation of Kornilov, the order for his arrest, and the collapse of the attempted *coup d' état.* At the critical moment Kerensky's fear of the *man-on-horseback* got the upper hand, and the only chance to save Russia for discipline and the war was lost. Whether it could have succeeded is a question. Its leader was a man of great strength. Kornilov had twice escaped from German prison camps, and later worked himself up by sheer force of ability to the highest command of the armies. His strength of character, coupled with his popularity among the soldiers, promised well.

Nor was the policy of Kerensky in dealing with the non-military part of his stupendous task any more successful. At the very beginning, as minister of justice in the first provisional government, he flung open wide the doors of the Russian prisons—took them off their hinges, as it were. Being off their hinges, he could not easily get them back in place, when he discovered at last that his conscious Russian citizens were less law-abiding than he had thought. He could not answer, even if he understood, the peasant who asked him: "what's the use to divide the land when we are dead?" Or, the soldier who thought it only natural that he should desert because he was tired of fighting, attached to his home, his family and his land. Indeed, it is difficult to see how any-

one could have stemmed the tide of disorder and disorganization, once the flood gates were opened. To do so would have involved making over millions of Russians; to give to the Moujik a new head, a new history and a new religion. For you can't execute or put millions into prison—"even in the name of liberty." Kerensky's initial mistake lay in undermining discipline in the army, and law and order among the civilian population. It proved not only his own undoing, but the undoing of stable government altogether.

After six months of virtual dictatorship he was swept aside by a new movement much more radical and extreme than that which had over-turned the Romanovs. Again, it was the proletariate of Petrograd, organized in soldiers' and workmen's *soviets,* or councils, that made the revolution. But this time they were conscious not only of their power, but of what they wanted. Dominated by the extreme wing of the socialist revolutionists—the Bolsheviki—they were determined to put an end to the war and to all vestige of middle class or capitalistic government.

The new revolution occurred on November 7, 1917. The *soviet* of the soldiers and workmen of Petrograd organized a monster military demonstration; the Kerensky government was swept away, and a revolutionary government, under the name of the Revolutionary Military Committee, was set up. The revolution was at once announced to the army in an official proclamation, with orders that the proclamation be read to the troops immediately, that officers not joining the revolution be arrested, and that under no circumstances were any commands to be allowed to start for Petrograd. At the same time, the following was announced as the program of the new authority:

"The offer of an immediate democratic peace; an immediate handing over of the large proprietorial lands to the peasants; the transmission of all authority to the *soviets;* and, an honest convocation of the Constituent Assembly." The proclamation ended with the words: "Soldiers! For Peace, for

Bread, for Land, for the Power of the People!" (Signed.) "The Military Revolutionary Committee."

This breathes a confidence and an assurance the proclamations of the Kerensky government never had. It is indicative of the much more rigorous policy of the new leaders, Lenine and Trotzky. Repeatedly, the latter threatened the inauguration of a "reign of terror" after the manner of the French Revolution. In the Petrograd despatches of December 17, he is reported to have told the objectors to the Bolshevist rule: "You are perturbed by the mild terror we are applying to our enemies. But know that within a month this terror will take the terrible form of the French revolutionary terror—not the *fortress,* but the *guillotine.*"

Lenine and Trotzky are radical socialists, the latter having been for a time an editor of the socialist paper, the *Novi Mir,* in New York. They are men of quite a different stripe from Kerensky. Theorists, too, it is true, but with it, uncompromising realists, who believe in using every instrument at hand to gain their ends. Thus, instead of an idealist faith in the ultimate goodness of the everyday Russian, these men suppressed the hostile newspapers and encouraged the Bolsheviki press in every way possible. Only the papers of the extreme left, like the *Izvestia,* were allowed in the army, such reputable journals as the *Ryetch* and the *Novoye Vremya* being refused circulation. In other words, like the Germans, they believe in propaganda, in giving the Russian the kind of reading matter that will make him think and act right(?). If money is necessary to spread the gospel of Bolshevikism, get it, and plenty of it. Even subventions from German sources were openly accepted, Lenine frankly replying to his critics, "that if the kaiser wished to contribute to his own funeral, he was quite willing that he should."

With the Bolshevist régime, Russian history entered a new phase, marked by the renunciation of the public debt, the proclamation of free lands, and the demand for the cessation of hostilities on all fronts, preliminary to a general peace. Control lies entirely in the *soviets,* or councils of soldiers,

workingmen and peasants, that is, in the hands of the masses of the cities. Five months of this extreme radical government has brought not only disorder and confusion at home, but disintegration and a humiliating peace abroad. Perhaps the failure to deal effectively with the enemy is not to be laid at the door of the Bolsheviki, though it is a matter of speculation whether men like Trotzky and Lenine ever really expected the German wolf to release his prey because of the peace cooings of the Bolshevist dove. To their credit, be it said, that for a time they emphatically declined any peace that did not secure the withdrawal of the armies from Russian territory and the recognition of the principle of no annexations. Why they made peace so promptly upon the resumption of hostilities by Germany, instead of standing by their original proposals, in which Trotzky defied the kaiser to continue the war, and, if he wished, seize a country where every man had a gun, and where the entire population had to be fed, is a mystery.

It is true the Bolshevists were concerned first of all with establishing the social revolution in Russia, with the vague hope that the leaven of internationalism would gradually do its work in the ranks of the workers and soldiers of the warring nations. To them the capitalistic state, whatever the form of its political organization, was the great enemy to be destroyed. For the Russian Republic, the revolutionists, like the Paris Commune, which demanded that "the absolute autonomy of the commune be extended to all the localities of France," ordered the recognition of the complete sovereignty of the local *soviets* of soldiers, workmen and peasants. An All-Russian Congress, composed of delegates from the local *soviets,* is supposed to represent the central power. When not in session, it confers its authority on a committee of the congress, or council. This is presumably the body to which Lenine and Trotzky are responsible. But, as was made clear by the dispersal of the national assembly, the *soviet* of Petrograd would not accept a higher authority. As a matter of fact, authority rests with a small minority of extremists, who

control the *soviets* of Petrograd, Moscow and other important cities. It represents, if it can be said to represent anything, the absolute rule of the proletariat.

In the meantime, separatist tendencies, which had lain dormant, or been suppressed, have appeared in all quarters of the once extensive dominions of the Tsars. Based on racial and nationalistic conditions they have been adroitly used to establish a tier of buffer states, from the Arctic to the Black Sea. Of these, much the most important from the standpoint of its effect upon the war is that of the Ukraine, or Little Russia. Its territory is very fertile, much of it lying in the rich black earth belt. Individual ownership of land is the rule, communal ownership, under the *mir,* with its pernicious obstacles to progress, never having been widely established in this region. This creates an economic basis for the difference between the Little Russian and the Great Russian peasant, and accounts to a large degree for the hostility of the former to the Bolshevist economic policy. He is more conservative, and opposed to land distribution.

But it is not merely in his system of land tenure and mode of agriculture that the Dnieper Russ differs from the Great Russian. The Little Russian differs from the Great Russian quite as much physically and temperamentally. He is, for example, considerable taller than the Great Russian, and, unlike him, he is dark, with brown eyes and black hair. In disposition he is open-hearted, hospitable and emotional. The brighter sun of the southland seems to have made him musical, imaginative, and poetical. He is fond of games, dancing and pleasure. To him Russia owes most of her music, her poetry, and her folk song. "What ecstasy, what joy has a summer day in Little Russia," cried Gogol, in the bleak and uncongenial Petrograd, as he wrote his "Evenings on a Farm in the Ukraine." Indeed, Gogol rejected all idea of kinship with the Great Russian, whose rough, surly and somewhat phlegmatic nature always annoyed him. The two groups also differ in speech. There are still many villages in the border

territory where the two have lived side by side without intermarrying and without understanding each other's language.

These differences were well understood by the Central Powers, and the Ukraine has been an object of their especial attention ever since the overthrow of the old government. Not only did they need this granary of Europe, but they saw in the dislike of the Ukranians for the Bolsheviki an economic as well as a racial basis for the dismemberment of Russia. Nor is this all. To the international significance of the Berlin to Bagdad Railway over the Balkan bridge there is now added the possibilities of a new and equally important route *via* Cracow, Lemberg, Odessa and the Black Sea, to the trade areas of Asia—a new intercontinental highway passing up the highly developed Oder basin across the low divide into Galicia, thence down the Dniester basin, skirting the borders of the garden province of Bessarabia, to Odessa. The line would pass through the richest grain and grazing lines of Eastern Europe and bring the Central Powers into close touch with the vast iron and coal deposits of the Donetz. It would reach out to the commerce of the Black Sea, and of Western Asia.

Again and again during this war attention has been directed to the dangers of a Middle Europe dominated by Germany. Here we have an extension of its area brought on by the disintegration of Russia, far beyond the expectations of even the most rabid pan-Germans. Economic penetration and control by Germans is almost inevitable with political and imperialistic prospects of so attractive a character. The resurrection in the last few days of the project for a ship canal connecting the Baltic with the Black Sea is striking evidence of the promptness with which they put their policies into practice. Such a canal would lie for its entire length in the dominated territory.

Hope of checkmating these grandiose schemes must lie in the regeneration of Russia, and in the revival of nationalism in European Russia at least. That this will develop and organize sufficiently in time to be of real military service in the war seems doubtful. On the other hand there is every

reason to expect that it will assert itself in the future and wrest the control of this important region from the enemy. Russian patriotism and the nationalistic spirit in Russia have too long a history to be so easily forgotten and pushed aside. Possibly America's sympathetic support of Russian democracy may bestir the Eastern slav in the interests of native land and patriotism to abandon the mad chase after Internationalism.

In the meantime the work of disintegration is going on; demoralization and anarchy prevails in the economic life of the people. Transportation always inadequate, broke down early in the war. Russia has only 9.3 kilometres of railways per square kilometre as against 114.5 kilometres in England, 102.1 in Germany, and 155.5 in Belgium. To this inadequate mileage must be added the shortage in locomotives and rolling stock. One of our foremost authorities on railroads said recently, that before the war, Russia needed 2000 new engines annually to keep her locomotive power up to the needs of the existing roads, but that instead of getting 2000, she economized by getting 200, and even less during the war. But this is far from the whole story. During the last year the management and control of the Russian railroads has been completely demoralized. We heard of whole trains abandoned by their crews, of bands of soldiers seizing trains and locomotives whenever and wherever they pleased for joy rides. Like reckless children in the exercise of their power, they pay absolutely no heed to the needs of the service or of the public.

With the transportation system of the country thus demoralized, it is evident that the food supply must be in a most precarious condition. The railroads do not function. Hence even if the food were to be had in abundance, it could not be brought to the centres of population at Petrograd and Moscow except with extreme difficulty.

Then there is the disruption of the monetary and financial system. The value of the rouble fluctuates continually. At no time now is it above 50% of its face value. Its buying

power is constantly called in question by the steady increase in the number of counterfeit coins appearing every week. Very naturally the peasant is unwilling to part with his grain and other articles save for fabrics, woolens, and cotton goods, farm implements and the like.

The chief sufferer from these conditions has been the city population, particularly the industrial workers. It is estimated that there are about 2,700,000 of them. Their representatives are in power, and having overthrown autocracy, it is quite natural that they should try to get some material return or advantage. They have adopted a labor program, which calls for a six-hour day at from $6.00 to $8.00 as one of the items of an extensive utopian scheme. In the meantime, they refuse to work save at intervals. Scores of the country's mammoth industrial establishments, like the great engine works at Kharkoff, and the huge rails-factory at Ekaterinènburg, are closed, just as are the huge mines of the Donetz. More unfortunate still has been a tendency towards incendiarism which has destroyed millions of dollars worth of property both in the town and in the country. Chief among the first was the destruction of one of the largest cotton factories in the world, the celebrated Prokhorof works at Moscow.

To find the causes of this extraordinary development in Russia during the last year is a difficult problem. How can one account for this complete surrender of the purposes so loyally proclaimed at the beginning of the war, or explain the wild chase after a universal brotherhood and a social millennium that has pushed aside all other consideration? Whether we can explain it or not, there are certain facts, historical and geographical in their nature, that will help greatly toward a better understanding of the situation.

All through her history Russia has been geographically

isolated. She is shut off by nature from western Europe. She is largely landlocked, and was therefore not stimulated to commerce and intercourse with other nations. She did not lie on the road to anywhere. On the contrary, she has always lain like a huge inert mass on the borders of Asia, constantly subject to influences from that quarter. In addition to this national isolation there has been local isolation. For Russia is a country of vast areas only sparsely settled. The roads are bad and the means of transportation have always been poor. The grip of the long Russian winter is very close. The country people, and they represent over 90% of the population, have always been isolated in their village communities, shut off from all stimulus to progress.

A similar isolation characterizes the religious life of the nation. Russia in the 10th century adopted the eastern or Byzantine form of the Christian religion, and so shut herself out from the cultural development of western Europe. The Orthodox Church has never entered deeply into the life and thought of her adherents as have the churches of the west, which accounts in large measures for the fact that she has wielded no influence on the revolutionary crisis. The great ecclesiastical Congress at Moscow last year should have developed into a national assemblage for the discussion and formulation of the Church's policy on the momentous problems of the day. Instead it degenerated into a gathering of respectable ecclesiastics concerned first and foremost with the questions of the property and the rights of the church under the Republic. The time-honored faith in the ultimate restoration of the Cross on the dome of St. Sophia at Constantinople was forgotten. With such dirth of leadership, the pulpits of the Russian orthodox faith became scared and silent. The churches were deserted. The public squares, on the other hand, were overcrowded with eager listeners, who failing to hear the message of human brotherhood from the priests, turned to the preachers of socialism.

To her peculiar geography must also be attributed the fact that Russia up to the war was not only predominantly agri-

cultural in its economic interests, but that her agriculture was very far behind that of western Europe in its development. We are so apt to forget that Russian agriculture down to very recent times rested on serfdom. Both on the imperial estates and on those of the nobles, the millions of peasants lived in a state of abject servitude. As late as the second decade of the 19th century, serfs were sold like chattel in open market, a fact readily attested by reference to the advertisement of sales of those days. Thus in a Moscow paper called the *Gazette,* of 1809, is this notice: "To be sold: three coachmen, well-trained and handsome:—two girls, the one eighteen and the other fifteen years of age, both of them good looking," etc. Serfs and cattle were intentionally put in the same category, as appears in such announcements as "In this house one can buy a coachman and a Dutch cow."

The serfs were finally emancipated by Alexander II in 1861. But the individual serf could not buy his land. The title was held by the village community of which he formed a part. For almost fifty years communal ownership continued among the peasantry of central Russia. The village community, or *mir* as it was called, absolutely controlled the economic life of these rural populations, and naturally destroyed individual initiative and incentive to progress.

Only a very small proportion of Russia's vast population of one hundred and eighty millions, is engaged in industrial and commercial life. This means that that important element, the middle class in Russia, is still exceedingly small. And, if we interpret this in the terms of politics, it means that the basis for a limited monarchial type of government does not exist. For it is the men of industry and commerce, united with the farmers and land-owners, that have furnished stability to the modern capitalist state.

Stolypin's land policy, adopted in 1907, was an effort at reform. It provided that the peasant could demand that his share of the land be allotted to him individually, and in his own right. Thousands of peasants had withdrawn from the communal system and the movement was going on rapidly

before the war. I traveled for some time with a government commissioner of Rybinsk engaged in the work of allotting land and adjusting the claims of the individual peasant and the village community. In nearly every instance it was the better type of peasant who decided to withdraw from the communal system of agriculture in order to become independent. It involved not only the breaking up of the *mir,* but the gradual building up of a class of small-land owners, and farmers, whose conservative instinct would, it was believed, ally them with law and order, and with the monarchy. But the war intercepted this process, and to-day Russia is paying the price for the lack of a large class of moderately well-to-do farmers and progressive industrialists. They would have furnished a basis for moderation and stability that is nowhere apparent now.

A further cause of the present situation is the poverty and ignorance of the peasants of these regions. Incentives to thrift were absent, while many causes for shiftlessness existed in the system. Ignorance and illiteracy went hand in hand. The proportion varies in the different provinces, but an average of 75% of the population can not read or write. The story of the soldiers of Petersburg in the incipient revolt of 1825 cheering for Constantine and the Constitution, believing that the Constitution was Constantine's wife, is one of many illustrating the lack of knowledge of public affairs. The influence of the press and the influence of the public schools were almost negligible factors in the life of the Russian people, before the twentieth century. That the government was not eager to educate the masses is only too true. Autocracy believed its own position stronger because of the docility of the ignorant and superstitious peasant. Cruel oppression marks its dealings with all those who wished to bring about a more liberal policy or who sought in any way to alleviate the lot of the masses.

Thousands of liberals were in this way forced into the ranks of the revolutionary groups. Driven to despair, they became extremists whose "fundamental principle," in the words of the

Stepniak, "was absolute individualism; the negation in the name of individual liberty of all obligations imposed upon the individual by society, by the family, and by religion."

To educate the people, and lift the millions of peasants out of their stolid acquiescence in the existing order, they began to "go among the people." The movement became very active in the seventies, and continued with more or less intensity down to the opening of the war, till, we are told, there was not a hamlet in Russia that had not been reached by these missionaries of revolution.

They came chiefly from the educated class, often from the best families in the land. Men and women alike left homes of luxury and opportunity to don the garb of the peasant or the laborer, risking the dangers of detection by government spies, of arrest, prison and exile. It is impossible even to estimate their numbers. What we do know is, that outlawed as they were, they were not over nice in what they said and taught of those in authority.

Ardent socialists, they preached the gospel of Karl Marx and the doctrine of revolution by force, in order "to establish," declares one of their most widely circulated pamphlets, "an empire of the working classes, on the ruins of the present social order." The despotism of the Tsar was no more roundly denounced than the oppression of capital. They taught their faith with the enthusiasm of religious fanatics, winning adherents by the thousands. In the nineties they went among the factory operatives, rapidly winning the Russian workmen to their cause. Thus the peasant and the workman of Russia really has had his education in social and political thinking, and it has been along very radical lines.

Nor was it through these emissaries of a new social order alone that the Russian masses were taught. For many years the foremost writers of Russia have been their allies. Foremost among them was Tolstoy. His championship of the oppressed peasantry, of open resistance to militarism, of political revolution, and of free lands is well known. Thus in that short but powerful sketch "Where is the Way Out?" he says:

"The slavery of the working people is due to this, that there are governments. But if the slavery of the laborers is due to the governments, the emancipation is naturally conditioned by the abolition of the existing governments, and the establishment of new governments, such as will make possible the liberation of the land from ownership, the abolition of taxes, and the transference of the capital and the factories into the power and control of the working people." To the simple peasant, the Revolution and the overthrow of Tsardom, followed by the proclamation of the distribution of the proprietorial lands was plainly the realization of the state, so eloquently predicted by Tolstoy and others. Land hungry for generations, and weary of war, he became possessed with one leading idea, to get his share of the land.

Besides, the issues of the war had never been his peculiar concern. Too ignorant to think and reason in terms of nationalism or even of patriotism, the Russian has always been prone to yield to circumstances, and to self indulgence. Even if he had not imbibed the anti-militaristic doctrines and ideas of international brotherhood from Tolstoy and other writers, he would still be, despite his autocratic government, the most care free individualist in the world. More than any one else he seeks for self-gratification, making light of the bonds and conventions of society. Artsabashev's *Sanin* (1909) expresses it fully, this worship of the natural man and the philosophy of self gratification. It is Bolshevikism in ethics and morals long before Lenine and Trotzky had the opportunity of trying its theories in practice.

The emancipated Russian, declared Herzen, Russia's earliest socialist leader, "is the most independent man in Europe. What shall stop him? Shall respect of the past? But does not the history of modern Russia begin with an absolute negation of nationality and tradition." Addressing the socialists of western Europe he says, "Your faith does not move us. You are too religious for us. We share your hatreds, but we do not understand your attachment for the heritage of your ancestors. We are too oppressed, too unhappy to be con-

tented with half-liberty. You have arrangements to make, scruples to restrain you. We have no arrangements, no scruples; but power fails us for the present." In the November Revolution his disciples at last got the power. What they will do with it ultimately remains to be seen. Up to the present they surely have not proceeded on the basis that they had arrangements or scruples to consider. They accept no obligations from the past; they repudiate the obligations of the state, treaties and agreements, all titles and claims to property, and demand the absolute rule of the proletariate not only in Russia but in all countries.

There was to be freedom—a great deal of it. But there was no program to keep it within the limits of the needs of the commonweal. That the Bolshevist régime in this reflects again a striking trait in the national character, is evident to all who know the Russian. He dislikes formal plans, organization and method.

To a friend who sought to arouse the spirit of emulation among the railway operatives during the provisional government by pointing to the achievements of the Germans by their organization, the leader of the men promptly replied, "We hate the Germans. They're too damned efficient." The average Russian always tries to avoid difficulties rather than to overcome them; he does not even try to get round them, but with that hardest worked word in his language *Nitchevo,* (It doesn't matter! don't mind!) he is very apt to turn to something else altogether. Perhaps it is the orient in him. For his is the way of Mary, not of Martha.

The Russian has the faith, the love, and the hospitality of Mary, but he lacks the practical characteristics of Martha. Nobody in the world will talk so long and so earnestly on the subject in hand, whether it be on some simple question of daily routine, or on the deeper questions of life, religious, social or political. Someone recently called them a nation of a hundred million orators. They are all philosophically inclined, and particularly prone to speculation on religious and ethical subjects. The brotherhood of man has for many

years had a peculiar fascination for them. It is almost a religion with them. Their religion shows itself, says Tolstoy, in their acknowledgment of the brotherhood and equality of all men of whatever race or nationality; in their regarding them as unfortunate; in their custom of begging one another's forgiveness on certain days; and even in the habitual use of a form of the word forgive when taking leave of anybody; in the habit, not merely of charity towards, but even respect for beggars, which is common among the people; in the perfect readiness for self-sacrifice for anything believed to be religious truth. . . ."

That Tolstoy knew his Russians, appears in the manner these qualities have shown forth in the dark background of the present war. Thus, says Dillon, when peasant women wringing their hands and crying aloud when their menfolk left for the front, were remonstrated with and told that the women of Sparta did not lament at such partings, they merely answered. "Then the women of Sparta were very cruel and wicked," and went on weeping bitterly. German and Austrian prisoners of war sent out to work have been treated in Russian villages not as strangers but as if they were of the family. "They could not help it," the peasants said, "they were ordered to fight just as we were." In this way German and Austrian prisoners often became dangerous enemy propagandists in the very bosom of the Russian people.

Carried away by their enthusiasm for this spirit of toleration of the Russian, by his naive childlike faith, and his sense of the brotherhood of mankind, writers like Tolstoy and Dostoievsky saw in the simple unsophisticated moujik the elemental force for the regeneration of Europe. Contrasting conditions in western Europe with those in Russia, Dostoievsky said, "Your Europe is on the eve of ruin; she faces a general universal catastrophe. The ant-hill which has long been in the course of formation within her, has been undermining her Christ, her church, and her morals. . . . Her unsolvable political questions, her unnaturalness must infallibly lead to one final disintegrating political war in which all the powers

will have a share, and which will break out in our century; perhaps in the coming decade. All old things will crumble forever. The waves will be broken on our (Russian) shores alone, for only then will it be revealed how greatly different is our national organism from that of Europe."

That the European cataclysm has come no one will question. On the other hand, few would be willing to admit that the course of events in Russia has revealed the presence of the great regenerating power predicted for it. There are those, I know, who profess to see it. Thus a writer in a recent article says, "the issues which we imagine we are contending for in this war, Russia had long since decided for herself, as a consequence of which she had more freedom to show to Europe than Europe could possibly show her."

Such extravagant utterances might well be allowed to pass unnoticed if they did not have so wide a circulation. The issues we are contending for in this war have as yet not been grasped at all in their larger scope by the Russians. Nor is it so easy to believe in the so-called superiority of Russian freedom. Anarchy is not freedom, nor can license be construed as liberty. Despite these enthusiasts, the Russian is still far behind Europe and America. Ignorance and poverty are primary factors in determining the status of a people in the scale of liberty and of progress. And these, unhappy Russia, has still to contend with, the cruel heritage of her geographic isolation, her hard climate, and her extraordinary history.

But explain it as we may, the anchor man of the allies in this great war slipped the rope at a moment when victory seemed certain. That demoralization did not overtake us was due largely to the fact that a new and better trained ally had joined in the pull for democracy. For a time the advent of the United States as a belligerent seemed to steady even wavering Russia, and from March to November of 1917 it was hoped that she might rally under the leadership of Kerensky. Indeed, there are many who believe that a clearer definition of allied war aims during these critical months,

with the acceptance of the principle of peace without annexations and indemnities, and the right of nations to determine their own destiny, would have saved Russia. Possibly! though one cannot help thinking when one reads the indictment of the allies by some of our ardent Bolshevist admirers, of the doctor who proclaims from the house tops that if his treatment had been followed, the patient would not have died. It is difficult to see how the allies could have saved unhappy Russia from herself, or, what is more important at present, from Germany. The revolutionary and disintegrating forces were both too strong and too numerous.

For the present these forces continue to dominate the situation. Extreme radicalism pervades the millions of the Russian masses till it has almost become a religion with them. The liberal middle class element, the intelligenzia, as well as the adherents of the old order are in hiding or silent. It would manifestly be futile for them to do anything else for the moment. That they will continue to do so, however, is not likely. Indeed, it is altogether probable that the gloved hand of German intrigue, once the Bolsheviki have sufficiently served her purpose, will be the first to encourage them. The German Junkers do not relish the thought of a Russian republic.

But the revolutionary movement of Russia is too broad and deep to continue to be the tool of German intrigue. Up to the present the Central Powers, by means of a powerful and insidious propaganda, have succeeded in directing it into channels favorable to their interests. That they can control it permanently is out of the question. It is too big a thing for that. Sooner or later it will sweep them aside or engulf them in a great wave of democratic revolt against autocracy and militarism in their own countries.

GEOGRAPHIC INFLUENCES IN THE CONDUCT OF THE WAR

By George B. Roorbach

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We are accustomed to the thought that geographic conditions have profoundly influenced wars in the past. Washington's army escaped the British trap in New York because of a fog; Napoleon conquered all but "Generals January and February" in his advance into Russia; the Valley of the Shenandoah and the Blue Ridge had important bearings upon the campaigns of our civil war; the great distance of the Philippines from home, and the tropic character of its climate, were important factors in our war with the Filipinos.

Are geographic factors today, in this most scientific as well as most dreadful of wars, as potent as they have been in other wars? Are the condition of the weather; the nature of the topography; the soil and mineral resources; operating today in decisive ways in the councils of war and in the operatives on the field? Or, has science more largely eliminated or modified the influences of geography? It is my purpose to point out some of the ways the conduct of the Great War has been influenced, and is, today, being influenced by geography. I am not to speak of those geographic factors that were responsible, in part, for the conditions that brought on war, but only of those which have had, or are having, decided influences on the way the war is being conducted.[1]

One of the first and most apparent geographic factors influencing the conduct of the war is geographic location. The

[1] Several books and magazine articles have appeared since the outbreak of the war emphasizing geographic influences. Among these are: Hilaire Belloc: Elements of the Great War; D. W. Johnson: Topography and Strategy in the War; R. DeC. Ward: The War and the Weather, in the Journal of Geography, Vols. XIV, XV and XVI; G. G. Chisholm: Geography and the War, in the Scottish Geographical Magazine, 1916; G. B. Roorbach: Geography and the War, Journal of Geography, December, 1914. In the preparation of this lecture, material has been taken from all these sources.

contrast of position between the Central Powers and the Allies is marked. Situated in the heart of Europe, the Central Powers are hemmed about on all sides by their enemies. Lying adjacent to each other in a compact group, from the North Sea to Mesopotamia, the Central Powers have at once two advantages not shared by the Allies: (1) the ability quickly to form joint plans of action; and (2), the ability to execute these plans with great dispatch. The military leaders of the Central Powers can easily get together. Members of the German general staff may dine tonight with the emperor in Berlin, take the train for Vienna and confer with the Austrian leaders at breakfast in the morning, or, in another day, all can get together in the Balkans. New conditions that arise requiring unified and harmonious actions can be met at once by inter-Teutonic conferences.

Contrast this condition with the means of harmonizing action among the scattered Entente Allies. England is an island, separated from her allies by the sea; France and Italy are separated by neutral Switzerland and a submarine-infested sea. Russia has been shut off from all her former allies, except for the long and dangerous voyage from Archangel. Now that the United States has entered the conflict, still another problem is offered to the mere harmonizing of effort. Inter-Allied conferences must be planned weeks in advance, to allow the leaders time to arrange and accomplish the trip to the central meeting places. Even then, carefully laid plans may fail. Lord Kitchener, with his staff, met death off the north coast of Scotland when on his way to confer with the Russian leaders. It is impossible to estimate how great the harm inflicted to the Allies' cause by this disaster. At any moment we may read of a similar disaster to a ship carrying our envoys. Secretary Root's mission to Russia required many weeks. How much might our influence with new Russia have been increased if we could fully keep in touch with her people and her government? Meanwhile, the Teutonic powers continue to act with a harmony largely made possible by their compact and central situation, which allows its leaders,

military and political, to get together on almost a day's notice, with little effort and no danger. The lack of unified action which has so grossly characterized the war waged by the Allies up to the present time, as well as the unification of the Teutonic nations, is explained, in part at least, by the facts of geographic location.

Possibly of still greater importance is the ability quickly to put plans into execution which is given the Central Powers by their geographic position. The various "fronts" are not far apart; troops and guns can be transferred quickly from one to the other. Hence, the Germans can concentrate either in the east or west for defense, or offense. Between the Russian and the French battle lines the distance is only a little over 800 miles, allowing quick change of men and arms from one to the other. Austrian troops likewise can be shifted to the north, or German troops to the south. Such quick, whirlwind offensives, as that of Ludendorff's, which overwhelmed Roumania, or that of last November, which swept like a flood down into the plains of north Italy, are made possible by the means the Teutonic powers possess of rapid transportation between fronts. This ability has the effect of increasing the fighting effectiveness of the Teutonic forces by the equivalent of many hundreds of thousands of men, as well as of making more effective guns or other supplies. Witness the time and effort required to transport troops, guns and supplies from western Europe to Saloniki, to Gallipoli, to Mesopotamia, to Egypt and Syria. Not only do the troops themselves and the guns spend many days and weeks idle and useless, exposed to submarine attack and other losses, but an army of men is required in providing transportation and supplies. The man-power and the gun-power of the western Allies needs to be much larger than that of the Central Powers even to put it on an equality with them, because of this necessity of long, over-sea transportation from one front to the other imposed by the facts of geographic position.

Situation in respect to the sea has operated with different force for the different nations engaged in the war. The fact

that Russia had no free outlet to the sea has been an almost incalculable disadvantage to the Entente. The Bosphorus and Dardanelles outlets from the Black Sea were the outlets of Russian grain. The early successful efforts made by Germany to bring Turkey into the war were inspired, not simply because Constantinople controls the way to Bagdad and the east, but because it controls the destinies of South Russia, and also because of the need of Russian wheat by western Europe. The control of Constantinople by the Central Powers has had much influence upon the war in west Europe, by cutting off food from Italy, France and England, as well as in east Europe, by cutting off munitions from Russia.

The narrow, easily closed Baltic outlet was useless to Russia as soon as war broke out. There was left to her only the distant Pacific port of Vladivostock, 6,000 miles from the battle front, and the ice-blocked harbor of Archangel, with, at the beginning of the war, its single-track of narrow gauge railroad. By almost superhuman efforts, this port was kept open for part of the winters and the double-tracking of the railroad was completed. At the same time, the ice-free harbor of Alexandrosk in the north of Finland was opened and a railroad built connecting it with Petrograd. But all this involved long delays and much expenditure of materials, men and money. Russian munition shortages during the war could be remedied only partially, and hence the Russian campaigns were greatly handicapped.

England, an island, was almost entirely a maritime and industrial power when the war broke out. She had only a small army; she could not feed herself or produce her own supplies without importing raw materials. Her navy has rendered wonderful service, but England's dependence upon the sea has made her especially vulnerable to the submarine.

The contrasts in the position of Great Britain and Germany, combined with the nature of the sea coasts, help explain many of the features of the naval warfare so far waged. To insular England, dependent upon the outside world for food and supplies, the fleet is absolutely necessary. The Central Powers,

on the other hand, because of their continental position are more nearly self-supporting, and need a fleet only for offensive purposes. The English fleet, superior in battleships, has therefore swept the seas clean of German shipping and blockaded the German and Austrian coasts. But it has had to be content with this. Secure behind the natural defences of the coast, the German and Austrian fleets remain undefeated, and almost unimpaired. At the same time, by occasional raids, into and across the North Sea, German cruisers have sunk merchant vessels and bombarded English coast towns, and by means of submarines spread destruction around all of Europe. German naval operations have been exactly analogous to guerrilla warfare on land in a mountainous country. Avoiding pitched battles, in which they know they would be unsuccessful, the Germans have continued all through the war to dart out into the open sea, raid towns or merchant fleets, and quickly return to their base; or, by means of the submarine, stealthily and unseen, lie in wait for the helpless merchantman. Such kind of warfare is always exasperating to the well-prepared nation, and in this case seriously destructive. The English fleet is kept constantly on the defensive, with little opportunity to take the offensive. Germany alone has the power to choose the time and place for a general naval engagement, and if she does not choose to invite such an engagement, none can take place.

Why is this so? Why has not the superior English fleet long since wiped out the much smaller Germany navy? The answer is found in the physical geography of the German coast. From west to east the coast of Germany is low and flat, the off-shore-waters shallow, and throughout its length protected by a string of off-shore beaches, sand-bars, and marshes. All German seaports are situated far up the mouths of the slightly submerged rivers that enter the sea, or at the ends of deep bays, whose entrances are protected by bars. Hamburg, for example, is seventy-five miles up the Elbe from the North Sea; Bremen nearly as far up the Weser; Lubeck, Stettin, Dansig and Konigsberg are all well back from the

Baltic. No port is near enough to the open sea to be bombarded by warships. The narrow, crooked, island studded entrances to the rivers and bays are easily protected from invasion by hostile fleets by land forts and sea mines. The gentle sloping, shallow shore, combined with the barrier beaches and swamps, make the landing of a hostile force all but impossible. Furthermore, the narrow straits between Scandinavia and Denmark made it relatively easy to keep the English fleet out of the Baltic, at the same time that the Russian fleet was bottled up in the eastern Baltic. Hence, the most that an enemy fleet can do is to blockade the German coast, and keep the fleet shut up in her protected havens. No matter how powerful, an enemy fleet cannot harm the German coast or force the German fleet to open waters.

While the Central Powers are thus defended by nature from sea attacks, they are aided by nature in the dastardly naval guerrilla warfare that they have waged. Unlike the German coast, the English coast has many cities directly on the shore, unprotected by shallow off-shore waters and natural barriers. Hence, the naval raids on the English east-coast towns. One of the several motives for the German invasion of Belgium was to get naval bases on the North Sea opposite the mouth of the Thames. From this new base and from the Helgoland Bight, German cruisers, under cover of weather, and by selecting "holes" in the British patrol, can dart out of harbor, sink a convoy of ships, or even bombard a coast city.

It must be remembered, also, that the great area of ocean that must be patroled by the allied navies, combined with the fact that the navy must be most of the time on the defensive, makes an enormous demand even upon so great a fleet as the British. Not only all the North Sea and the long coast line of Great Britain, and Ireland and the coast of France, but the North Atlantic approaches to the English Channel, the North Sea and the Arctic Ocean must be guarded as well as all the Mediterranean region. While the allied navies are thus scattered, constantly on the move, encountering the gales of winter and the dangers of the deep, the personnel straining

to the utmost nerve and muscle to outwit the foe, the German high-sea fleet lies safe and snug behind the protecting coast of the North Sea, her men resting in security. Hence, after storms and after protracted cruises when the English patrol may be least efficient, the Germans, fresh and strong, can dart out if for a single moment the patrol is relaxed, or fogs and mists make it possible temporarily to avoid that patrol.

Another factor that adds to the effectiveness of the relatively small German fleet is the ease and safety with which it can move along its own coast, concentrating now in the North Sea, now in the Baltic. The Kiel Canal, in combination with the enclosed bays of the German coast makes this possible. Hence, the navy, like the army, can quickly concentrate now at one place, now at another, and the opposing English fleet must be on the alert and guard all points of possible attack.

Because of these facts, the German high-seas fleet, while remaining comparatively safe, can keep the allied navy constantly on the defensive, and try to wear them out by constant vigil. For effective offensive, however, Germany has had to rely on a new weapon—the submarine—to meet the blockade imposed by the allied high-sea fleet on Germany's commerce. The submarine is of little offensive aid to England, but of enormous help to Germany. The large use of the submarine by Germany is a response to geographic conditions. It has struck the death knell to England's proud isolation. Never again can Britain be so peacefully secure.

Let us turn now to warfare on land and note the influences of physical geography upon the planning and conduct of campaigns. Here the controls of geography are most clearly indicated. Distance, topography, weather and the nature of the resources all are important considerations. Let us note first the geographic factor of distance, confining our discussion, from lack of time, to the western front.

On the western front the advantage of distances lies with Germany. The heart of France is Paris; the important industrial sections of France are in the north-west, closely adjoining the Belgium-German frontier. German industrial districts

are scattered. Berlin and its vicinity, while important, is not, like Paris, the vital heart of Germany. From Metz, the strongly fortified city of Germany near the French boundary, the distance to Paris is about 165 miles. To Berlin, however, from the nearest point in the French frontier, the distance is 400 miles, nearly two and one-half times the distance from Germany to the French capital. The shortest route from Berlin to Paris passes through Aix la Chapelle, on the Belgian-German frontier, Liege and Meuberge. From Aix la Chapelle to Paris is about 200 miles, nearly half the distance being across Belgium, while from Meuberge to Berlin across Belgium the distance is 435 miles. With Belgium in the hands of Germany, Paris is only a little over 100 miles away from the German lines. Paris and the industrial north of France, the most vital part of France, are therefore, simply from the fact of distance, much more subject to invasion than Berlin. Distance also favors the Germans in aircraft raids. London is reached from the aircraft bases in Belgium much more easily than vital centers in Germany can be reached by aircraft from the western front.

More important than distance for the rapid movement of armies are the physical features of the boundary belts. The western boundary of Germany extends nearly 450 miles, one-third of which is with France. The northern half, bordering Holland, is entirely artificial, crossing a flat, low, open plain, densely settled and covered with a net work of roads, railways and canals. Along Belgium and Luxemburg, the boundary line crosses the dissected plateau of the Ardennes—a rough and wooded region sparsely inhabited. Encircling the northern and western edges of the Ardennes is the Meuse River, which, with its tributary the Sambre, leads from the German frontier across Belgium into France. South of the Ardennes the Moselle skirts Luxemburg and offers a route into France. The boundary with France extends from the southern edge of the Ardennes, near Longwy, across the hilly, but low, plateau of Lorraine to the Vosges Mountains. The high, forested, eastward-facing slopes of the Vosges continue the boundary

southward, forming the most effective natural barrier between the two countries. Between the Vosges Mountains and the Swiss Jura is a low pass, the Burgundian gateway, offering easy connection between the Rhine and Rhone valleys. Once across the boundary, an invader finds the rivers of northwest France converging upon Paris. The Oise, Aisne, the Marne, the Seine, all point toward the French capital. On the German side, on the other hand, the rivers run at right-angles to a line of invasion. The Rhine must be crossed to reach Berlin, and beyond the Rhine lie the Ems, the Weser, and the Elbe. It is apparent that an invasion into the heart of France is much easier than an invasion to the heart of Germany.

The nature of this boundary belt explains, in part, the German plan of invasion. A northern army followed the route skirting the northern edge of the Ardennes barrier. By leaving German territory near Aix la Chapelle and reaching to Meuse at Liege, Holland's neutrality could be observed, but Belgium must be crossed. Advancing up the Meuse and Sambre through Namur, Charleroi and Meuberge, the German army could spread over the low rich plains of northern Belgium and France and advance upon Paris by not only the shortest way, but by the route that offers least resistance from natural barriers. How these features determined the campaign have been clearly described by Johnson.

Within four weeks from the outbreak of the war, the German army, under Von Kluck, in a great swing to the east and north, had advanced to the very gates of Paris. Marching from the northwest, they crossed the Oise, the Marne and the Grand Morin, to the east of the city. That Paris was not taken and the French armies enveloped and captured is due primarily to the wonderful fighting qualities of the French and English troops under the strategic leadership of Joffre, combined with the naturally defensive character of the topography of the Paris basin. While Von Kluck's army was before Paris, the German armies to the east were held in check by the aid of these defensive barriers of topography,

and by early October the western army was pushed back across the Marne and the Aisne.

A powerful German army had massed in the Lorraine gateway to strike toward Paris from the east. Here the French had taken advantage of the natural barriers offered by the east-facing escarpment of "le Grand Couronne," near Nancy. The Battle of Nancy, that was fought for this neutral line of defense ended in German failure. In Johnson's words, "Not far from 400,000 highly trained German troops were massed on the lower land in the course of the battle and hurled against the wooded plateau scarp. French infantry in greatly inferior numbers intrenched along the higher levels, and French artillery, concealed in folds of the undulating upland, in ravines cut back into the escarpment, and in patches of woodland, poured their combined fire upon the assaulting columns below. Wave after wave of the grey-clad invaders in mass formation swept up the lower slopes of the Grand Couronne, withered away under the merciless hail of the steel from the heights above, ebbed back to the lowland again in weakened currents, leaving a gray mark on the plateau face, to mark the highest reach of each impotent wave." Day after day the slaughter went on through all the first third of September. Nature's fortifications manned by Frenchmen were invincible. 40,000 German dead, 100,000 on the casualty list, and France saved from invasion from the east were some of the results as the answer of this natural protection.

Farther north, at Verdun, similar attempts were made to break the French front. The early attempts of September and October, 1914, failing, the Germans prepared to take Verdun by military operations on the most extended scale ever attempted. But here, as at Nancy, the Verdun escarpment, high and steep, with its limestone caverns, its wooded patches, its jutting spurs and receding ravines, has been, where combined with French valor, too strong for the best prepared offensives of the most efficient military machine in the world.

In Flanders, low, flat, swampy—conditions opposite to those at Verdun and Nancy—the Belgians and British have also

been aided by nature in holding back the Germans in their attempts to reach Calais and the Strait of Dover. Here marsh and canal, and the flooding of the land from opened dikes have been as effective a protection as the plateau escarpments of the Paris basin. How the details of the fighting in Flanders and the plain of North France have been influenced by topographic features is known to all who have read of the fight for Vimy ridge and Messines ridge, for Hill No. 60, and so on. These incidents are sufficient to show that topographic features are today as important as they ever have been before in war operations. They have determined plans of campaigns and decided the fate of bloody battles.

Another factor that has operated in the conduct of the war on the western front is connected with the natural resources of the boundary belts. The German general staff undoubtedly had in mind many reasons for invading Belgium and north France. Belgium offered the shortest and least obstructed route to Paris. To possess Belgium and north France gave Germany naval and submarine stations opposite the Thames and near the Strait of Dover. But the plains of Flanders also were rich agricultural lands. Not only would their possession cut off supplies to France (the occupied territory is an important sugar, potato, grain and animal country), but they would support the invading army and produce a surplus for Germany. Belgium and north France were a hive of industry and to take over the factories—iron, steel and textile—would cripple France and add to Germany. Most important of all, from the point of view of both the present and the future, are the coal fields of France. The only important coal area in France has its center in Lens. Here 70 per cent. of the 40,000,000 tons of French coal is produced, and French production in times of peace is barely half her needs. Hence, to take north-west France is to deprive the French of one of the essential sinews of war, and to add it to Germany's already abundant supply. Not surprising is it, therefore, that the severe fighting about Lens has been called "the battles for the coal fields." With these coal fields behind the Ger-

man lines, France today is dependent upon the small fields of the central pleateau and for importation of coal. She is badly crippled by their loss. The Belgian coal fields, which stretch along the Maas from Liege to Charleroi, before the war were producing about 23,000,000 tons, and are now also added to Germany's large supplies.

Of equal, or even greater, importance as a resource factor in the conduct of the war is the Lorraine iron field. This field is nearly bisected by the German-French boundary line in Lorraine. When, in 1871, Germany took Lorraine, she took half of the richest iron fields in Europe and one of the richest in all the world. Before the war nine-tenths of the French iron ore production and three-fourth of the German came from this field, most of which lies within ten miles of the border. The German drives toward Verdun and Nancy were drives not only toward Paris, but for the iron fields of France. The fields about Nancy are still in French hands, but the largest and most important ones east of Verdun are today held by the Germans. Trains bearing troops and supplies to the western front take back iron ore to the great furnaces on the coal fields of Westphalia and for the iron works at Essen. Germany is thus supplied in abundance with the most important mineral resource needed in war, while France is deprived of the needed amounts. This means enormous importations of iron and steel, with the great demand that this involves upon shipping.

If, at the end of war, Germany could push her boundary in Lorraine 10 miles west to the present battle line, an ironless France would be forever doomed in her industrial development, and reduced to a second or third rate military power. Germany, on the other hand, would still further increase her leadership as a producer of iron and still more augment her military strength.

East of the Lorraine iron field are the Saar coal mines. Lying in close proximity to the iron fields they are complementary to them. Because of her need of coal for smelting iron ores, many Frenchmen hope to see the French boundary

pushed eastward, not only to include all the Lorraine iron field, but the Saar coal fields as well.[2] Germany, on the other hand, will strenuously fight to protect those fields. On the fighting about Verdun hinges the control of the Lorraine mineral deposits. If the battle about Lens is a "battle for the coal fields," the battles about Verdun and Nancy are "battles for the iron mines and the Saar coal fields."

If the Allies could push the German line back to the Rhine, Germany would be cut off from her chief source of iron ore, the important Saar coal field and the large sources of phosphorus fertilizer which are a by-product of her phosphatic iron deposits. The Allies would thus vitally cripple German production of submarines, munitions and all the supplies that depend upon iron, and to some extent her agriculture. At the same time they would save ocean tonnage and much time which is now consumed in carrying iron and steel and coal to France from America and England. In this connection, it is interesting to note that the sector of the battle line just taken over by the Americans in France is east of Nancy on the Lorraine front, protecting the Nancy iron fields and facing the Saar coal fields.

One cannot read the war dispatches of a single day without noting references to the part played by weather conditions in the fighting. As pointed out by Ward, we may note two influences, one climatic, the other daily weather conditions. By climate we mean the general or average conditions of the weather for seasons or months. The various climatic conditions on the various fronts were well known when the war broke out and military plans made to conform to them. In Belgium and France, for example, the winters are mild, but damp, cloudy and disagreeable. The January average is only 35 degrees F. (the same as Washington, D. C.), and the thermometer rarely goes below 15 degrees. But constant cold rains, drizzles and fogs, wet snow and deep mud, with occasional freeze-ups mark the winter months.

[2] Germany's total coal production in 1912 was 222,000,000 tons of which 14.4 million tons were from the Saar field and 89.1 from Westphalia.

These conditions mean special preparations and impose heavy restrictions upon military operations in winter, both on land and in the air. Hence, comparative quiet rules in December, January and February. We wait for "spring offensives" when the rain lessens, the skies clear, the fogs are fewer; or, in the fall, we read of the "hastening of military operations before winter rains set in." On the Mesopotamian front, on the other hand, opposite conditions prevail. The intense heat and drought of summer force the main fighting into the winter months. Summer temperatures of 120 degrees to 130 degrees F. in the shade, combined with little water and much dust, are enemies the English forces had to overcome in addition to the Turks. The fall of Bagdad last spring was the result of the winter campaign of the English, planned in great detail to meet the requirements of the desert.

On the Russian front constant cold, with occasional thaws, characterize the winter climate. Rivers, swamps and soil are frozen, snow lies deep all winter. Thaws are infrequent, but important when they do occur. To meet these climatic conditions, special preparations are made in the way of warm clothing, steam-heated trenches, sleeping bags, white cloth for protective covering of uniforms in the snow, and so on. Winter operations on this front are also held up.

But it is not only the climate that affects military operations. The weather, the atmospheric conditions from day to day; sudden rains or snows, thaws or high winds, fogs or sunshine —may determine the result of a whole campaign. "Climate tells a general what *may* be; he wishes to know what it *will* be tomorrow." Weather conditions have always played an important part in military operations, but never before, probably, have atmospheric conditions had so great an influence. This is due to several reasons. In the movements of troops and the carrying out of campaign plans weather conditions are apparently of no less importance now than in the past. But in the modern use of artillery and new importance of aircraft, the weather has a new and added importance.

Artillery has played a great part in the operations of this

war. Heavy field guns of enormous weight and great range have been used as never before. Now the effectiveness of artillery depends upon securing the proper range by means of observation balloons and airplanes and signaling results of shots to the gunners. Such observations and signaling cannot be done if mists and fogs or high winds interfere with the aircraft observations. Again, and again, we read of artillery operations at a standstill because of weather. Also, weather conditions determine the rapidity of movement of artillery. To move guns of many scores of tons weight is no small task. A protracted rain, softening the ground, may make impossible the following up of an infantry victory because the guns could not be brought up. A heavy fog hastened the German capture of Namur early in the war. Under cover of the fog the Germans were enabled to bring up and plant their heavy siege guns in a good postion to reduce the forts, without danger to themselves. When the weather cleared, these guns demolished the forts.

The large use of the Zeppelin and the airplane in this war has given an unusual importance to weather. Zeppelin attacks particularly have been dependent upon wind directions. Usually these attacks have been made during light winds and some haze, indicating very careful study of weather and accurate forecasting by the Germans. However, there are several examples of Zeppelins being destroyed by high winds. Some have been wrecked on the coast of Norway, and several have been lost in fogs over Holland. The use of airplanes is less dependent upon the winds, but raids on London usually occur on clear, calm nights. For observations along the battle front, low clouds and mists make low flying necessary and expose aviators to gun fire, so increasing the danger as to present aircraft and artillery operations. German aviators seem to have been especially trained in the defensive use of clouds. According to Ward, they "lie in wait high above fleecy clouds and dart upon isolated machines, avoiding open conflicts when possible. They attain their best success when there are

clouds." German planes are colored to match the cloudy sky.

The great amount of fog and cloud along the western front, especially in winter, imposes, therefore, heavy restrictions upon activities. Added to the wind and wet snows that make movements of troops difficult, are the air conditions that hinder observations for the artillery engagements which are now so important in all land operations.

Recognizing the importance of the weather conditions from day to day in the daily operations of the war, all the armies are provided with means of forecasting. As soon as the Germans took Belgium in August, 1914, they took over the Belgium Royal Observatory at Uccle and made it the field weather center for observations taken along the western front. That German meteorologists have been efficient in the issuing of daily forecasts is indicated by the frequent accuracy with which they have launched naval raids into the North Sea, and directed their offensive operations on land. The English and French also have their weather stations and daily forecasts are issued, both for the western front and for the Mediterranean service.

We have indicated only a few of the many ways in which geographic conditions have affected the conduct of the war. Always important, modern military leaders are today recognizing the influence of physical features and climate on military operations more than ever before. To study effectively these effects and to provide men qualified for the work, the Geography Committee of the Council of National Defence exists side by side with other scientific committees. On General Pershing's staff in France is one of America's best trained geographers. In addition, the staff has a trained meteorologist to forecast weather for military purposes, and another meteorologist has been put in charge of an observatory for immediate use of aviators and artillerists. Not only on the French front, but in the military camps in the United States a meteorological service has been established.

We cannot get away from the control of physical features

either in war or in peace. "Man's conquest of nature" is a phrase that has been often repeated in this age of wonderful accomplishments by science. We see mountains tunneled, isthmuses cut across, the air navigated, the polar regions laid open, and we are sometimes led to think that nature has at last been forced to step aside for man's progress. The more we examine it, however, the more does it become apparent that nature is not so much being vanquished by man as that man is adapting his ways and methods to nature. Man's acts in war and peace are still moulded or modified in a myriad of ways by the influences of geographic environment. Geographic forces, it is true, may take on new powers or lose their old value with new inventions and new scientific discoveries. The submarine and the airplane, for example, have greatly altered the significance of some geographic factors during this war, but the uses of these new methods are themselves profoundly affected by geographic considerations at the same time that they bring a new or different emphasis upon old factors. Geographic factors still function, though with different values.

THE EMPIRICISM OF WILLIAM JAMES

By Edgar A. Singer, Jr.

Professor of Philosophy

Nothing could be easier, you would say, than to distinguish the things man has made from those he has merely stumbled upon and found. The suns and their satellites, with the laws of their turning; the earth, with its seas and continents and the ways of its winds and weather—surely no man took thought on these things to make them. Whereas, from the first bit of flint chipped to serve a human need to all our world has now to show of instruments of power and works of art we have a record of human ideals wrought in material, while man, surrounded by his handiwork, has come to live more and more under laws of his own making.

Aristotle thought the difference between products of nature and works of art so plain that he need not pause to explain it. The years that have passed since then have developed no better mind than Aristotle's, no keener wit than Plato's, but they have brought us a wealth of experience—of an experience at once enlightening and disillusioning, until

> Jetzt sind wir so klug und witzig
> Es verblutet uns das Herz.

We are no longer sure of very much, and among the things we are most doubtful about is just this distinction between what man has made and what he has found. To prove this, no one need go further afield than just to consider himself. Surely, I may say of myself, my character, my private life that it is man-made, for am not I the man that made it? It expresses all my ideals so far as I could realize them, and never would it have been just what it is had I not moulded it that way. And, yet, who among us has not sat up of nights with that strange being he calls himself and wondered however he came to bring so uncompanionable a companion home

with him and where the devil he found him? Ernst Mach tells an amusing anecdote at his own expense. One day he was mounting the steps of a bus when he noticed, at the other end of the aisle, a man's face peering into his. He had no more than asked himself—"Where have I seen that degenerate looking pedagogue before?"—when he discovered he was looking into a mirror.

And, who, wearying of this sorry companion, has not tried to change him for a better, only to find himself after a longer or shorter while with the same old fellow at his elbow—a trifle more set in his ways, perhaps, but otherwise little altered? Of the sadder sort of autobiographies I should put the Journal Intime, of Henri-Frédéric Amiel, easily first. Not from pain or poverty, not from the malice of other men nor any disgrace of outer fortune did he suffer, but just from the being that was himself. "From the beginning," he writes in 1858, "I have been a dreamer fearing to act—in love with perfection and as incapable of renouncing her demands as of meeting them. In short, a mind of wide vision and a character of no strength; curious to feel all that is to be felt, unfit for any action." "Here," comments his friend, Edmond Scherer, "we have Amiel's cross. He wanted—he wanted to want—to will and will-power was wanting in him. He cursed the inner spell that was on him, but he could not shake it off. After each attempt to break it he fell back into himself again, more bewildered, more weary and bruised than ever. In the waging of these combats the years wore on, until the moment was near when Amiel would have to acknowledge to himself that the circle was definitely closed behind him." Would you say that Amiel had made his destiny or found it? Would you say that any of us is of his own workmanship, or, does our life slowly unfold itself to us, as to Oedipus his fate?

What is thus suggested by self-examination is confirmed by the study of other lives. The friend whose wayward course has made your affection anxious for him—can you, with the best will in the world, change him from himself? Some, out of the bitterness of their experience, have said it would be

easier to repeal the law of gravitation than in anyway to alter a human destiny. Others, to be sure, are more sanguine and will not give up seeking a way so long as there is a will to save. But whether, even when they appear to succeed, it is not rather their patience that is rewarded by being allowed to live long enough to witness what would have come about without any of their doing, or whether character is more truly a thing made by human effort than a thing found and unfolded to our observation—respecting these matters there is divergence of opinion.

Now, confidence in our ability to tell what we have made from what we have found once shaken, there is no saying how far our questioning mind may carry us. No saying, I mean, in the case of any individual man—for it is easy enough to tell the general history of this doubt and uncertainty. It reaches all the way from those who think that back of all apparent creating by finite beings there is a Nature with its laws that was never made but can only, little by little, be made out. Let us call those who think in this way "realists." Historic uncertainty then reaches all the way from the realists to those who think that the heaven, the earth, and all that in them is, have no reality, save as they are the thought and work of finite minds. We will call these thinkers "idealists." From realist to idealist, and back again through all intermediate phases, the dialectic of history swings; but it does not merely mark time therefore, it also measures progress. It was of one moment—I think, a rather interesting moment—of this progress that I wanted to speak this afternoon. Let this, then, be my prologue—and, so to the tale.

In 1907, William James wrote of the philosophy to which he had devoted the last ten or twelve years: "I fully expect to see the pragmatist view," so he called this philosophy, "run through the classic stages of a theory's career. First, you know, a new theory is attacked as absurd; then, it is admitted to be true, but obvious and insignificant; finally, it is seen to be so important that its adversaries claim they themselves discovered

it. Our doctrine of truth is at present in the first of these three stages, with symptoms of the second stage having begun in certain quarters."

Looking back over the ten years that have lapsed since this was written, I cannot say that James's prophecy as to the future of pragmatism has been fulfilled, but that the world, at least the world in which I have lived, has lost its first sense of the absurdity of pragmatism is undoubtedly true. No one was more bitten than I with this first feeling of the absurd, unless it was some other of my kind among those who gathered of an evening in 1896 to listen to a reading of James's now famous little essay on "The Will To Believe"—the essay which, so far as James was concerned, opened the campaign for pragmatism. James had written the paper that winter as a lecture to be delivered before the Philosophical Clubs of Yale and Brown Universities, and I cannot recall what the occasion was that brought a small number of us graduate students at Harvard together to hear it re-read; but I do recall that we were very much bewildered and not a little shocked by the reading.

Not all, I dare say, who afterwards read this "Will To Believe" will have experienced any such shock and bewilderment, nor will many have felt what we found so upsetting in a bit of writing that was, as writing, certainly, altogether delightful. But, you must know that this particular gathering was made up of students who had been brought up in that theory of truth which I have called the realistic, and their habitual attitude toward truth was such that they held their truth the truer, the more they were its discoverers and the less they had had to do with the making of it.

There were, to begin with, the laboratory men. Now, a laboratory is a school of the most rigid discipline—a discipline whose first principle is "keep yourself out of your experiment." I think you will understand what I mean by this when I say that a scrupulous experimenter about to take conclusive readings in a matter that promises to be of some value to science will, if possible, get another observer—ignorant of

their import—to take these readings for him, lest something of his own excitement and anxiety corrupt his very touch, sight and hearing, and warp his result to his will. And, what was this James was defending—a "Will To Believe"? No wonder some wag of the lot dubbed it "The Will to Make Believe." And, what was this again James was saying—"For purposes of discovery . . . indifference is to be less highly recommended, and science would be far less advanced than she is if the passionate desires of individuals to get their own faiths confirmed had been kept out of the game. On the other hand, if you want an absolute duffer in an investigation you must, after all, take the man who has no interest whatever in its results—he is the warranted incapable, the positive fool." Had James addressed a gathering of the Sons of St. Patrick, in the sense of demonstrating to them that the Pope of Rome was the Beast mentioned in Revelations, he might have called forth a noisier response, but none less sympathetic than ours.

One who would invite a man to bring his enthusiasms, his likings and dislikings, in short, any will of his other than the will to persevere, into a laboratory with him would naturally not forbid him to keep all this equipment by him in whatever pursuit of truth he might engage, whether of history, economics, morals or religion. And, just as James shocked the realist spirit of that little Harvard gathering of a score of years ago, so have his writings fallen afoul of realism wherever they have been read—and perhaps few writers on philosophy have been more widely read than William James. This is to have made enemies, indeed, for the genius of realism, the spirit of the seeker who would find what he might find and call it truth, naked, unclothed upon with garments of human interpretation, has sometime breathed in every science and every art.

Take the realistic historian now—but you will doubtless know this character better if I show him to you and the effect he produces upon other temperaments, than if I merely describe him as a type. Among the most entertaining of the

reviews that Anatole France contributed to Le Temps, in the late 80's and early 90's, is one that he devotes to a work "tout à fait solide et puissant" of Louis Bourdeau—L'histoire et les Historiens, essai critique—a critical essay on history considered as an objective science—"in which," as France remarks, "M. Bourdeau puts works on history in a class with fables and the Tales of Mother Goose.

" 'History,' says M. Bourdeau, 'is not and cannot be a science.' The reasons he gives for this have not failed to make an impression on my mind, and perhaps there is a special reason why they should impress me—the sum of which is that I had tried to point out these reasons before he did. I had thrown out suggestions of them flippantly and in a spirit of badinage ten years ago in a little book of mine called the 'Crime of Sylvestre Bonnard.' I set no store by them then, but, now that I see they are worth something, I am in haste to claim them.

" 'In the first place,' I said in this little book, 'In the first place, what is history? History is the written presentation of past events. But what is an event? Is it any fact whatever? No, sir. It is a noteworthy fact. Now, how is the historian to judge whether a fact is noteworthy or not? He judges according to his taste and caprice, follows his own idea, in short, proceeds after the manner of an artist. For facts do not of their own nature divide themselves into historical facts and non-historical facts. Again, a fact is something extremely complex. Does the historian represent facts in all their complexity? No, that is impossible. He will represent them stripped of the greater part of their detail, consequently truncated, mutilated, different from what they were. As to the interrelation of these facts the less said of that the better. If a so-called historic fact is brought about (which is possible) by one or more non-historic facts—and for that very reason unknown—how can the historian establish a relation between these facts?'

"These, if I am not mistaken, are the fundamental ideas

upon which M. Louis Bourdeau rests his right to refuse to history any scientific value. . . ."

But, "indulgent minds find a way to get along with the treacheries of history. This muse is false, they think, but she no longer deceives us when we have found out that she is deceiving us. Constant doubt shall be our kind of certitude, they say. Prudently, we will go our way from error to error toward a relative kind of truth, for even a lie is some kind of a truth. . . .

"But, as for M. Bourdeau, he does not wish to be deceived even knowingly, and he absolutely repudiates history. He drives her from his door as deceitful, shameless, dissolute, having sold herself to the powerful, a courtesane in the pay of kings, an enemy of the people, wanton and false."

So far, the picture of non-objective history in all its ugliness—history as it has been written in the past. But, now the history of the future, objective history, realistic history—ah, that will be quite another story. It is Bourdeau who speaks: "The historians of the future will have for their first task the gathering and interpreting of statistical data concerning the common events of life. The activity of thought always expresses itself in acts, and the only way to take account of these is, after having classified them under definite functions, to set them down at the moment of their happening, to count them under given conditions of population, of time and place, then to compare these results, whether simultaneous or successive, to note the variations of the function and to make the inductions that they warrant. Thus, and only thus, may we some day know what the multitudes that make up humanity are doing. . . .

"This is the way we must write history from now on, not only in the young countries which, like Australia, Canada, La Plata, are founded under new conditions, but even in the old societies of Europe that, like the others, hope to work out for themselves an ideal order of labor, of peace and of liberty. For one who has reached our point of advancement, any other way of studying history is inexact and childish. A

reform is coming and will either be made by the historians, or in spite of them. The age of literary historiography is about to close; that of scientific history about to open. When it shall be able to reconstruct for us the life of a people in the way we have indicated we shall see that no story can offer so much of interest, of instruction and of grandeur."

I do not know that every one is bound to share Bourdeau's enthusiasm for statistical history. Perhaps some will hope with France that they may not be spared to read history written in this way and will solace themselves the meanwhile with their Thucydides and Herodotus. But, at least all will have caught the martial tread of realism resounding through these passages.

In the laboratory sciences the objective spirit sits as a strong man in his castle, impregnable, unattackable. There we see him dreaming dreams of conquest, the fair domain of history in which we may include economics seems ready to fall to his sword and spear for the world's endless betterment. And what lies beyond? Lands that are the fairest, richest, most desired of all and yet which will take all his daring, all his courage, all his steadfastness and an undying enthusiasm to make his own. They are the lands of morals and religion.

I like those chapters of history that tell how the spirit of the experimenter sets out to conquer the realms that have so long been ruled by masters with whom he can have no sympathy—tradition, coming out of the vague mists of the past; superstition, born of human ignorance; mysticism, inarticulate, ecstatic, offering reasons for itself that are reasons only to those who ask for none. To win all this for objectivity, for the kingdom of the kind of truth that believes only because the experiment says so, the experiment that any unbeliever may repeat for himself and abide by the result—this is surely a brave adventure, and whether they meet victory or defeat one cannot refuse one's enthusiasm to those who have had courage to make it.

Of those who set forth in this way I should call David

Hume the father. Would you, for example, know what is right and what is wrong? Then turn not to inspired writings, but travel widely through the civilizations of different countries and different times and seek as you would seek any other historical fact, first, what people *called* good and what they *called* bad. Then, if underlying the vast contradictions of historic precept you find, nevertheless, an agreement in the purpose these precepts set in their native settings served, why, then, you will have arrived at the only meaning good and bad can have.

Or, would you know whether this is God's world or not? Turn not to reputed miracles, and indulge not in idle dreams of another world in which the faulty humanity and utter finiteness of this one will have found its supplement and correction; but, take just the order and purpose of this world as your best experience reveals it to you. It may be that this seeking will leave you dark, puzzled, uncertain; but better the unrest of judgment suspended than the dreamlike peace of faith unfounded.

> It fortifies my soul to know
> That, though I perish, truth is so.

wrote Arthur Clough. And, again, he has written:

> To spend uncounted years of pain,
> Again, again and yet again,
> In working out in heart and brain
> The problem of our being here;
> To gather facts from far and near
> Upon the mind to hold them clear,
> And, knowing more may yet appear,
> Unto one's latest breath to fear,
> The premature result to draw——
> Is this the object, end and law,
> And purpose of our being here?

Over these verses Clough has written: "Perchè pensa? Pensando s' invecchia."

Why think, indeed, when thinking leaves one old—so old, so cold, so sadly wise? That thinking—the realist's way of thinking—does leave one in melancholy mood may be no objection to thinking in this way; but it may not be ignored as a fact of history. Realism's hymn of triumph is written by the best of its poets and the most sincere of its prophets—Leconte de Lisle. One does not attempt to translate a Leconte de Lisle, but the thought of the final verses of his poem on the Southland may be put in some such way as this—

> Man, if with heart full of joy or bitterness
> Thou go at noonday through these radiant fields—
> Flee! Nature is empty and the sun consumes.
> Nothing here is alive, nothing sad, nothing joyous.
>
> But if having put tears behind thee and laughter
> Thou art turned to forgetfulness of this troubled world
> No longer knowing how to pardon nor how to curse
> And wouldst taste a last sad volupté—
>
> Come! The sun speaks to thee a glorious language,
> Lose thyself in its implacable flame
> And return slow-footed to the vile city of men
> Thy soul seven times steeped in divine nothingness.

It is like that. This wandering in a world we did not make and cannot change, in which all our creating is illusory —a chance, trivial expression of what the world has made us —with no other purpose in our wandering but

> "For to admire and for to see
> For to be 'old this world so wide"

—why yes, the fulness of such experience comes as near as can be to bringing us to a seven-fold sense of the *néant divin*.

Well, when a man's philosophy has turned bitter to his tongue and hangs heavy on his heart, there are three things he may do. He may abide by the consequences of his philosophy, and seeing no fault in the premises accept the conclusion with all valiance. Or, he may rebel against all logic and reason and trust that sympathies and antipathies are safer guides to truth than any evidence could be. Or, finally, he may ex-

amine the premises anew. It is, I must confess, only to the last—to the reasoners and critics who go patiently to work to re-examine old beliefs—that I lend a respectful ear. But I do not know that I can begin an account of the backward swing from such extreme realism as I have pictured to such extreme idealism, as I can tell only part of before I close, better than by letting the mere spirit of unreasoning revolt against this selfless objectivity express itself.

With an exquisite insight into the psychology of those he calls "Wir Gelehrten," and with no care for the truth or error of the ways of the objective spirit, Nietzsche registers his revolt against all this spirit stands for. "However gratefully we may still welcome the objective spirit," he writes in his Jenseits von Gut und Böse, "in the end we must learn to put some caution into our gratitude and some restraint on the enthusiasm with which selflessness and impersonality of mind have come to be extolled as ends in themselves, as an emancipation and an enlightenment. The objective man who no longer curses or upbraids, the ideal scholar in whom the scientific instinct after a thousand whole or half failures has at last come to full growth and blossoming, is surely the most precious tool there is, but his proper place is in the hands of a stronger man than he is. We say he is an instrument—he is a mirror, he is no end in himself. The objective man is indeed a mirror. Accustomed to subject himself to all that is to be known, without any other pleasure than such as the knowing, the mirroring gives, he waits till something comes his way then spreads himself delicately before it so that the light foot-steps and ghostly passing of spirit things may not be lost to his surface and integument. What there is of a person still left in him seems to him accidental, often arbitrary, oftener still disturbing: so much has what was his very self become a medium through which pass and in which are reflected foreign forms and happenings. If he tries to think about himself at all it is an effort for him and more often than not a failure. He changes easily, he tries to grasp his

own needs and only then is he clumsy and awkward. Perhaps it is his health that bothers him or the petty pent-up character of wife or friend, or the lack of companions and companionship. Oh, yes, he tries to think out what is the matter with him. No use! Already his thought has swept on to the more general case, and tomorrow he will know as little as he did yesterday what's to be done about it. He has lost serious interest in himself, time spent on himself is wasted. He is cheerful, not for want of things to worry about, but for want of fingers and hands to lay hold on his trouble. His way of taking whatever turns up, his sunny, unconstrained hospitality to anything that comes along, his way of wishing everybody well, his dangerous indifference to the difference between yes and no—ah, how often he has to pay for these, his virtues! And, as just a man, he is too often taken for the caput mortuum of these virtues. Would you have him love or hate—I mean love or hate as God, women and brutes understand love and hate—why, he will do the best he can and give what he can. But, no one should be disappointed if this is not much—if just here he shows himself ungenuine, unattached, unreliable—rotten. His love is thought out, his hates are trumped up and rather a *tour de force,* little side issues and exaggerations. He is only genuine when nothing prevents him from being objective. His mirroring and everlastingly even soul can no longer say "yes," no longer say "no." It imposes nothing on anything, neither does it upset anything. It says with Leibnitz "Je ne méprise presque rien."

If in this passage Nietzsche reveals his delicate antipathy for a character we had all been taught to worship, in others he shows himself a pragmatist before that word had been heard of. The philosopher for him is no wanderer of the seas, accepting what shores he comes upon, whether they smile on him or frown. For Nietzsche, the philosopher is a Cæsarian conqueror who has his way with truth, and truth is such a thing as a strong man may have his way with.

But, "I am not of those of whom one asks 'why?'" Nietzsche has somewhere written, and that is so true that I can use him for no more than a vehement example of spleen. If I am to enter upon the path of a more or less reasoned reaction against that objectivity we have all sometime held sacred, I must turn to those of whom one can ask "why?" And, notably, to William James.

Now, if I do turn to James to ask him "why?"—Why is not the realist, with all his sad heroism and resigned courage, the noblest and best that man has imagined?—he answers, or I take him to, Because realism is a philosophy of little faith! Faith it is that makes worlds, realistic science has only the wit to acknowledge and the strength to suffer what faith has wrought. Bold to endure, it is timid to change, and a world in the making needs its makers, needs its poets and actors more than it needs audience or spectator. At the bottom of the realist's brave heart lurks an abiding fear—the fear of making a fool of himself. But a world in the making like a battle in the fighting cries out for fools and the foolhardy. Faith risks to the point of folly, and because all making anew is a colossal risk, let us have colossal faith.

Here, if I am not mistaken, you have the principal difference between the realism that went before and the pragmatism that came after. The faith which the builders rejected is become the head of the corner. For there are such things, the pragmatist contends, as faiths that realize themselves, beliefs that come true only because they are firmly held and courageously acted upon, hopes that would never have been fulfilled had not he who held them gone ahead in the confident expectation that they would be fulfilled. Take, James would have you, just that familiar class of questions of fact, "questions concerning personal relations, states of mind between one man and another. *Do you like me or not?*—for example. Whether you do or not depends, in countless instances, on whether I meet you half way, am willing to assume that you must like me, and show you trust and expectation. The

previous faith on my part in your liking's existence is in such cases what makes your liking come. But if I stand aloof, and refuse to budge an inch until I have objective evidence, until you shall have done something apt [as the "realists" say] *ad extorquendum assensum meum,* ten to one your liking never comes. How many women's hearts are vanquished by the mere sanguine insistence of some man that they *must* love him! He will not consent to the hypothesis that they cannot. The desire for a certain kind of truth here brings about that special truth's existence, and so it is in innumerable cases of other sorts. Who gains promotions, boons, appointments, but the man in whose life they are seen to play the part of live hypotheses, who discounts them, sacrifices other things for their sake before they have come, and takes risks for them in advance? His faith acts on the powers above him as a claim, and creates its own verification."

These be but trifling affairs of commonplace life if you will, but the imagination sweeps easily on from the relation of man and man to all that man's work that is done shoulder to shoulder. "A social organism," James goes on, "of any sort whatever, large or small, is what it is because each member proceeds to his own duty with a trust that the other members will simultaneously do theirs. Wherever a desired result is achieved by the co-operation of many independent persons, its existence as a fact is a pure consequence of the precursive faith in one another of those immediately concerned. A government, an army, a commercial system, a ship, a college, an athletic team, all exist on this condition, without which not only is nothing achieved, but nothing is even attempted. A whole train of passengers (individually, brave enough) will be looted by a few highwaymen, simply because the latter can count on one another, while each passenger fears that if he makes a movement of resistance, he will be shot before anyone else backs him up. If we believed that the whole carfull would rise at once with us, we should each severally rise, and train robbing would never even be attempted."

Have you ever, O patient hearer, in the heat of a political campaign for what you thought were better things met with that cool, chilling intelligence that hastens to warn you against trying to change human nature? As it was in the beginning it is now and ever shall be, gangs without end. Amen! And he is right, this unduped and undupable intelligence is right —but on one condition only: The world will always be as it was at the beginning if it is exclusively inhabited by unduped and undupable intelligences—by realists, in short. Or, have you ever tried to refresh your tired soul with what the Germans have written of Realpolitik? If so, you will already know a great deal of what pragmatism is not. It is not a philosophy of the "what never has been never can be" temper of mind.

"There are cases," James puts it, "where a fact cannot come at all unless a preliminary faith exists in its coming. *And where faith in a fact can help create the fact,* that would be an insane logic which would say (with Huxley) that faith running ahead of scientific evidence is the lowest kind of immorality into which a thinking being may fall. . . ."

I am afraid there is about the pragmatist something of that dangerous citizen who will not hesitate on occasion to grasp this sorry scheme of things entire and shatter it to bits, full of the faith that it can be remoulded closer to the heart's desire.

"But now," James returns to his argument, "these are all childish human cases, and have nothing to do with the great cosmical matters, like the question of religious faith. Let us pass on to that. . . .

"To most of us religion comes in a way that makes a veto on our active faith illogical. The more perfect and more eternal aspect of the universe is represented in our religions as having a personal form. The universe is no longer a mere *It* to us, but a *Thou,* if we are religious; and any relation that may be possible from person to person might be possible here. For instance, although in one sense we are passive portions of the universe, in another we show a curious autonomy,

as if we were small active centers on our own account. We feel, too, as if the appeal of religion to us were made to our own active good-will, as if evidence might be forever withheld unless we met the hypothesis half way. To take a trivial illustration: just as a man who, in a company of gentlemen made no advances, asked a warrant for every concession, and believed no one's word without proof, would cut himself off by such churlishness from all the social rewards that a more trusting spirit would earn—so here, one who should shut himself up in snarling logicality and try to make the gods extort his recognition willy-nilly, or not get it at all, might cut himself off forever from his only opportunity of making the gods' acquaintance. This feeling . . . that by obstinately believing that there are gods . . . we are doing the universe the deepest service we can, seems part of the being and essence of the religious hypothesis."

I do not lay this passage before you as an example of clear thinking and cogent reasoning. Who does not find it baffling, elusive, leading to no kind of action, must have a mind differently constituted from mine or from any with which I am more intimately acquainted. It is, if you please, the groping of a faith that feels it has a right to exist but does not know as yet what is right for it to do. All of which is most unpragmatic—not at all practical. But, perhaps this very quality, this manner of James's of feeling his way through the dark *en tatonnant* with his heart's courage for his only light, is what most endears him to our age. We sit with Zarathustra midst shattered tables of the law, and our awkward fingers cannot grave new ones hurriedly. We fumble, we hesitate, we begin again. We fumble, we hesitate, but we *do*, if we are idealists, begin again.

Now, one of the new things we have tried is just this manner of meeting the universe half way in the matter of religious faith. And this trial has been no interchange of philosophical abstractions; but a struggle of very living men. To tell about it will perhaps illustrate better than anything else the appeal pragmatism made to some and the offense it gave to others.

We have all known, though doubtless our fathers knew him better, that studious theologian who, as proof of a devout life's industry, left behind him a Testament worn to something like its elemental dust. He was a realist in temperament and sought God and God's meaning in documents as an historian might seek to reconstruct some character of the past from the archives. He was supplemented in his labors by learned, indefatigable searchers of other remains of the past from whose ruins they sought to bring corroborative testimony. He was opposed only by other students who had pored over their Testaments with equal devotion, if to opposite purpose, and by other archæcologists who had searched the ruins with equal pains, if with other result. But protagonist and antagonist alike of the Christianity into which we were born were realists. Neither dreamt that the existence or non-existence, the benevolence or cruelty, the oneness or manyness of God were matters with which his personal wishes and strivings, his finite wantings and not wantings could have anything to do. If you had suggested to either that perhaps God was still in the making and that those who would know Him must strain their eyes toward the future, not keep them fixed on the past—it is a question which would have been first to put you down as an impious fellow and a blasphemer.

How different from all this is the spirit of that recent movement within the Christian church that is generally called modernism. "Defined and condemned in the encyclical *Pascendi,*" writes J. Bourdeau, in 1907, "modernism continues to fill the reviews and the periodicals, even those that ordinarily treat of profane matters. This internal crisis of Catholicism, this new attempt to reconcile the church with the times, aimed at internal reform, not at schism. It was destined to end in the excommunication or interdiction of some of its more refractory spirits and in the submission of almost all. And, yet, by those who shared its hopes, modernism is not looked upon as the bed of a torrent from now on to be dry; it runs like an underground river, and some day, perhaps, will come

to the surface again with sufficient force to sweep away the dikes."

Well, this modernism which M. Bourdeau, in his little volume "Pragmatism et Modernism," brackets with pragmatism as being of the same temper, is, like all other modernities, not very new. We associate it with such names as Father Tyrrel, in England; l'Abbé Loisy, in France; the senator and novelist Fogazzaro, in Italy, and if the matter has interested us, with a host of other writers no less distinguished. But it is really of the essence of Newman, and goes back to Pascal. For "The heart," Pascal has said, "has its reasons that the reason does not understand." It was to these reasons that Newman listened, and offers us again in his Grammar of Assent, and it is these reasons that modernism would have to be the only ones on which Christianity can safely be founded.

But, what are they, these reasons, and what does this voice of the heart say? Its first clear utterance is negative. It does not care who wrote the various books of the Scriptures, or what corroborative or contradictory evidence those who study the documents and monuments of the past may come upon. "Higher critics," so far from being its enemies, are welcome participants in its cause. As little does it cling to the literal sense of the various dogmatic interpretations the church has from time to time put upon the sacred writings. Would you know, for example, whether there is a Real Presence? Modernism would answer: The Eucharist is indeed meaningless unless there be a Real Presence; but whether Christ is really there for you or not depends on you alone. And the like of other dogmas.

Yet it would appear that history, sacred, ecclesiastical, or profane, is no dead letter to the modernist. He is intensely conscious and amply studious of the past. Nor will he, if I make him out, permit its episodes to be treated as symbols, parables and allegories. No, the past tells the story of a great religious truth in the making. If you ask him what Christianity is, he will tell you it isn't, it never has been, it never will be any definitely finished thing; but for him it is

the best guide to living that he, with all his devotion and all his thought, can make it. The modernists are Christians because they are heirs to, and imbued with the spirit of Christianity, as they are not inspired of the Buddha or of Confucius. Yes, they are devout Catholics because they can work better at the making of a religion in the atmosphere of their ancestral church than in any other air. Religion to them is to aid in the way most suited to their temperaments and traditions in the evolution of religion, for them Christianity is in process, and we are the potters that mould it, not the explorers that discover it.

Well, J. Bourdeau is not wrong—modernism and pragmatism are indeed of like temper and children of the same age —an age of troubled outlook, but of brave if chastened hope. The contrast between the realistic theologian with his ancient texts, documents, monuments and the idealistic theologian who turns to the past not for authority but for guidance, not for facts but for a sense of tendency and direction—this contrast is not unlike that other one pragmatism has brought about between "Natural Religion" and what I may call "Human Religion." Natural religion sought in the order of nature evidence of its designer, of a thoughtful purpose back of, or in it, in the same spirit that a naturalist might hunt for the tracks of a mastodon or follow the wanderings of a glacier. For the humanist, the purpose of nature is a thing in the making, and we are here to help make it, it will turn out as our finite efforts form it—good or bad, as we are good or bad; wise or not, as we are. The practical message of "Human Religion" is pretty much that with which James closes his little essay, "Is Life Worth Living?" "Be not afraid of life. Believe that life is worth living and your belief helps create the fact. The scientific proof that you are right may not be clear before the day of judgment (or some stage of being which that expression may serve to symbolize) is reached. But the faithful fighters of this hour, or the beings that then and there represent them, may then turn to the faint hearted who here decline to go on with words like those with

which Henry IV. greeted the tardy Crillon after a great victory had been gained: 'Hang yourself brave Crillon, we fought at Arques and you were not there.'"

I have tried to show pragmatism as a moment in the swing of thought from realism to idealism, and how for it the most vital, that is to say, the moral and religious aspects of our world are things to work and fight for, to make and to mould, not just to find and come across. Its god is indeed a god of battles, and we are his soldiers on whom his victory depends. But as I view this battle it is not to be fought out in heart throes and outpourings of sentiment. These may indeed change and better human relationships, but it must not be forgotten that human relationships exist in a physical universe that is older than they, and promises to outlast them. Now just the physics of things show a strong tendency to be amoral and atheistic. "You all know the picture of the last state of the universe which evolutionary science foresees. I cannot state it better than in Mr. Balfour's words: 'The energies of our system will decay, the glory of the sun will be dimmed, and the earth, tideless and inert, will no longer tolerate the race which has for a moment disturbed its solitude. Man will go down into the pit and all his thoughts will perish. The uneasy consciousness which in this obscure corner has for a brief space broken the contented silence of the universe will be at rest. Matter will know itself no longer. "Imperishable momuments" and "immortal deeds," death itself, and love stronger than death, will be as if they had not been. Nor will anything that is be better or worse for all that the labor, genius, devotion, and suffering of man have striven through countless ages to effect.'

"That," comments James, "is the sting of it, that in the vast drifting of the cosmic weather, though many a jeweled shore appears, and many an enchanted cloud-bank floats away, long lingering ere it be dissolved—even as ours now lingers for our joy—yet, when these transient products are gone,

nothing, absolutely nothing, remains to represent those particular qualities, those elements of preciousness which they may have contained. Dead and gone are they, gone utterly from the very sphere and room of being. Without an echo; without a memory; without an influence on aught that may come after to make it care for similar ideals."

Has not, then, realism the last word in this argument and does not the rolling mechanism of things have its way with us in the end—since it compasses not only our death, but the collapse of the very theatre in which our little lives have played themselves out?

No, I should say, this is not the moral of the tale, though there is a moral to the tale. "Knowledge," writes Francis Bacon, in his Novum Organum, "knowledge and human power are synonymous." So are human impotence and human ignorance synonymous. The child that dips a cup of water from the fountain is subduing nature's mechanism to its needs. It is only a question of how great is our knowledge if we would know how great is our power.

We die, our world dies, only because we know no better, have thought of no way of preventing; but knowledge and human power are indeed synonymous, and I know of no end to either. But, as for those of us bound to die before we have learned how not to, and as for our children whose world may well vanish before they have thought of a way of saving it, we have always this solace—that we know we are facing the only way salvation can come from when our face is toward science. "For nature," says Bacon, with his queer, crooked smile, "nature is only subdued by submission."

THE LIMITING FACTORS IN THE FOOD SUPPLY OF THE NATION AT WAR

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The relations of the food supply revolve about the interacting variables of production, distribution and consumption. By production we mean the total available food supply, plus imports and minus exports. Included in distribution is transportation as well as trade. Under consumption we understand the absorbtion of foodstuffs by the consumer class, including hoarding, ingestion and waste. Since it does not lie within the limits of this presentation to make an analysis of the variable of distribution, I content myself with a summary of the influences of variations in distribution, production and consumption upon each other, as illustrated in the large experiments of national experience in war-time:

Increase in production tends to facilitate distribution.
Decrease in production tends to hinder distribution.
Increase in production tends to increase consumption.
Decrease in production tends to increase consumption.
Normal distribution tends to increase production.
Subnormal distribution tends to lower production.
Normal distribution tends to lower consumption.
Subnormal distribution tends to increase consumption.
Increase in consumption tends to increase production.
Repression of consumption tends to lower production.
Increase in consumption tends to hinder distribution.
Repression of consumption tends to facilitate distribution.

Decreased production and disturbances in distribution tend to increase consumption for the same reasons in society as a unit that reduced efficiency in the operation of a machine increases the cost of maintenance. High prices tend to increase production, though other factors may modify or even

obscure this influence. Low prices do not depress production below the usual plane of effort, other factors being normal, since the producer cannot change his occupation, though he will modify his practices so as to elect the least unfavorable direction. High prices tend to reduce consumption, though this rule applied to the population as a whole does not hold in this country today on account of high earnings in many lines of work. Low prices tend to increase consumption. Therefore, when a food administration holds prices to a moderate level, in order to meet the purchasing power of the mean wage, this operates directly against efforts at conservation.

Obviously, here are revealed cross currents of influence, which, entirely apart from consideration of price, must be arbitrarily taken advantage of or counteracted, as the case may be, in any systematised scheme of food control. Whether the distribution be controlled by man or fixed by circumstances, since in a nation at war the output of agricultural products may be roughly stated to be inversely proportional to the output of non-agricultural products, in the final analysis the people must produce more or consume less food. The criteria are different when the situation is viewed from the angles of production or consumption. From the standpoint of production, we measure in terms of allocation per capita; from the standpoint of consumption, this is misleading. Just as the speed of a squadron is the speed of the slowest ship, so in the revictualment of a people, the subsistence of the people is the subsistence of the poorest class. We must produce more or consume less. What are the limitations in these operations? In what follows I confine myself to consideration of the direct products of the soil, disregarding the domesticated animals and the foods derived from them, since the relations, though more complex, are identical in each group of productions. It is, however, easier to increase the output of animal products than to increase the supply of bread grains.

A review of the limiting factors of the food supply of a nation at war may be undertaken from four points of view.

It may be regarded as a problem in agriculture, possessing for the student of agriculture particular interest because it represents in a large way a field experiment. It may be considered from the standpoint of subsistence; to the student of nutrition the problem represents a mass experiment in subsistence. It may be considered from the standpoint of economics, since the relations to trade, industry and finance are so intimate that the subject lends itself to the speculative treatment of the theoretical economist, as well as to the practical handling of business men. It may finally be considered as a war problem. The military purpose of food supplies is the vital meaning of this problem. Increased production of foodstuffs is as much military necessity as increased production of explosives. Reduced consumption of foodstuffs in certain directions, in order to fulfill our obligations to our Allies, is as much a war measure as sending military forces to France. All other features of the problems of our national food supplies fade into insignificance in comparison with the overwhelming importance of food as a military factor. Food is both defense and offense against Germany.

We may erect a balance sheet of food, depicting the ledger of a people at war.

To obtain a CREDIT, we must:

Produce more;
Import more;
Eat less;
Waste less, or
Manufacture more foodstuffs.

We incur a DEBT, when we:

Produce less;
Export more;
Eat more;
Have transportation failure, or
Use foodsuffs as raw materials
for technical manufacture.

We may say, without further discussion, that we cannot now import more. We must export more in this war. For ourselves we would have no food problem; it is created by the necessity of exporting food to our Allies. Foodstuffs may be gained by manufacture, as when perishables are conserved or when a feed grain, like oats, is converted into a foodstuff. Loss of foodstuffs through manufacture is illustrated by the manufacture of alcohol and acetone from grain, of glycerine from sugar, or in the use of edible fat in the manufacture of tin plate.

In a young land, where the ratio of population to area is low, where agriculture is expanding every year as a natural growth, it ought to seem easily possible to stimulate production in such a crisis as now confronts us. On analysis, however, we shall realize that formal stimulation of production is a difficult procedure. The limiting factors in cultivation of the soil and husbandry are: climate, capital, labor, fertilizer, seed, machinery, and transportation.

Climate, the most important variable of all, requires no discussion, although even here an interaction exists, since unfavorable weather harms a subnormal stand more than a normal one, and thus the skies bless good farming and curse poor farming. Good weather, the absence of winter-killing and drought, may add as much as two hundred million bushels of wheat to a crop.

Expansion requires capital. In war-time, when banks must look forward to successive war loans, the borrowing of money for farming becomes difficult. In addition, tenants cannot borrow from the Federal Farm Loan Fund. It is scarcely to be expected that the capital of the agricultural class can be materially increased during the coming year, except as the expression of savings from the sales of last year, and these are unfortunately regional.

Seed selection, of great importance in increase of yield, will rarely be improved under stress of war. We face this coming season the most serious condition in seed that has confronted the country in years. Owing to severe weather, following

directly upon delayed maturation of the corn, a large part of the largest corn crop on record was killed, leaving kernels that will not germinate. We used to import selected seeds, also to export them; now each country is withdrawn into its shell.

Fertilizer we lack sorely. To replace the potassium we used to import from Germany, we now recover potash from alkaline lakes in Nebraska and California; we pump it from underground deposits in California; we split it from spars in the Rocky Mountains; we extract it from the green sands of New Jersey; we leach it from the sea weeds of the Pacific; we precipitate it from the fumes of smelters, smoke stacks and cement works. But, all together, we have produced but a small fraction of the amount we used to import. Fortunately for us, it is the least important fertilizer. We have almost unlimited deposits of phosphate in mines and quarries. But we are very short of sulphuric acid necessary to make it available for application to the soil. If the German dictum be true, that the civilization of a nation is measured by its production of sulphuric acid, we are not the most highly civilized nation. Nitrates, the most of all, we must carry from Chili; and tonnage is so scarce that there are not enough bottoms to bring the huge amounts needed by the allied nations in the manufacture of explosives, and also to supply our agriculture with the amounts desired even for the normal cultivation of the soil. Germany, shut off by blockade from the nitrate beds of Chili, developed synthetic methods for the manufacture of ammonia and nitric acid within a year after the declaration of war. The Allies have not yet entered upon the manufacture of synthetic ammonia and nitric acid, but, instead, still haul nitrates from Chili by the hundreds of thousand tons. Because of our neglect of intensive cultivation and artificial fertilization, our yields in grains per acre were low. This is now in one way an advantage, since not seriously dependent on artificial manures, our production will not be notably injured if we do not secure them. The nitrate nitrogen applied to our soil just before the war did not represent more

than two per cent. of the nitrogen contained in our cereal crops. But free availability of nitrate or ammonia at this time would enable us to greatly augment the yield of grain without enlargement in acreage and with little increase in labor. Ammonia we now recover in an efficient manner, but it all goes into explosives, except what is needed in essential industries, as in refrigeration and the manufacture of dry batteries. Insecticides have also become very scarce, since these chemical substances have either been claimed by priority for war needs or have become scarce through difficulties in importation.

The American farm was well equipped with machinery before the war, but maintenance is difficult and expansion still more difficult. The makers of farm implements have been unable to secure their normal supplies of metals and woods; and their labor is easily attracted to munition plants. Shortage of cars has made deliveries greatly delayed. All in all, improvement in implementation is not to be expected in 1918. It is easy to invoke the aid of tractors, on paper. But the experiences of England and France last year indicate that sudden expansion in tractor farming is very difficult of accomplishment.

The importance of normal transportation to the distribution and consumption of foodstuffs is absolute. Every person in the United States now appreciates in his own nerves what the economist means by fluidity in the channels of transportation. But that free flow in transportation is of equally crucial importance to agricultural production is not so generally recognized. It is bad enough for the farmer to have the delivery to the farm of the things he needs delayed, to the embarrassment of his operations; but when the outward movement of a crop is delayed, this amounts to the disruption of the spring program of the farmer, to say nothing of the losses in time and the effacement of supplies.

Probably the most crucial difficulty in agriculture in wartime lies in the scarcity of labor, especially in this country, where we define production in terms of men rather than in

terms of acres, as illustrated by the fact that a farmer in the middle west produced over four times as much per annum as a peasant in Belgium before the war. When we entered the war, of the population of 105,000,000, one-third were children under fifteen years of age, about 36,000,000 were males and 34,000,000 females above that age. In all, about 44,000,000 were engaged in gainful occupations, of which about 35,000,000 were males and 9,000,000 females. Of the 44,000,000 engaged in gainful occupations, about 14,000,000 were engaged in agriculture, more than half as owners and tenants, less than half as laborers; of these, not over a million and a half were women. The man-value of these agricultural workers was under 12,000,000. In 1910, the average outlay for farm labor was a little over one hundred dollars per farm per year.

In 1910, 38,000,000 gainful workers produced in total income of the nation values equal to about 28,000,000,000 dollars, or 730 per worker. In 1917, 44,000,000 gainful workers produced in total income of the nation values equal to over 50,000,000,000 dollars, or 1,130 per worker, a gain of about 55 per cent. In 1910-13, 12,600,000 agricultural workers brought forth products worth 9,300,000,000 dollars, or 820 per worker. In 1917, 14,000,000 agricultural workers brought forth products worth 19,300,000,000 dollars, or 1,360 per worker, a gain of 65 per cent. In 1910, 10,800,000 manufacturing and mechanical workers produced 8,500,000,000 dollars worth of output, or 800 per worker. In 1917, 13,500,000 manufacturing and mechanical workers produced 15,000,000,000 dollars worth of output, or 1,110 per worker, a gain of 40 per cent. From this, it is clear that the pre-war income of the agricultural worker was low; but his increase in income with the war has been highest. The greater money value of the product has been partly due to increase in quantity, partly to increase in price; the latter holds especially true of the agricultural products.

Now, of the 14,000,000 farmers, tenants and laborers engaged in agriculture (using the term in the widest sense)

upon our entrance into the war, 204,000 were taken by conscription, some volunteered, and about 2,000,000 were diverted to other occupations. Not only were many more men drawn to other occupations than were withdrawn for the army, the best men, in the mechanical sense, left the farm to enter factories. The labor totally engaged in agriculture has been reduced 16 per cent. in numbers, and probably 25 per cent. in efficiency. The operation of the draft was lenient to agriculture, since less than two per cent. of the men engaged in agriculture were conscripted, while four per cent. of men engaged in all gainful occupations have entered the army. One-sixth of Canadians classed as in gainful occupations have entered the army. We have only begun the transfer of labor from civilian to military occupation. Each million soldiers require at least three million industrial workers to support them. In addition to supporting our army, we must manufacture supplies for the Allied armies. In another year, with the forecasted increase in our army, the number of men devoted to military operations and support may easily reach twelve million. This will be one-third of all male workers.

We must either produce more per acre or cultivate more acres. We still have unimproved lands, despite the fact that the figure for cultivated land per capita of population has been falling for two decades. Only England had a similar choice; on account of her large areas in grasses, she has had the opportunity to expand in cultivated area. France, Italy, Germany and Austria-Hungary could not expand in agricultural area; they could only attempt to increase the yield per acre, and they have all failed. Whether attempting to increase production by expansion or by intensification, the effort is in opposition to the operation of the law of diminishing returns. Our agriculturalist must either apply efficiency methods, develop co-operative farming, secure urban or military labor, import labor or call women to the farms. In such a situation as now confronts us, the installation of efficiency methods is out of the question, since the quality of labor upon the soil has been lowered. Output per man in manufacturing of war

implements has been enormously increased through application of efficiency methods and improvements in machinery; but intensification will not this year be possible in agriculture, apart from the use of tractor methods. Co-operative agriculture, the secret of continental advancement in cultivation of the soil, offers large opportunities for success in return for well-directed organization. Urban labor is still to be had, on paper at least. According to statistical estimates, five million men are classified under census headings in professional, domestic and personal services and in clerical occupations. Many of these were taken by the draft, but many more could be replaced by women and set free for the farm. Artisans are out of employment in relatively large numbers throughout the country, due to the lapse in building operations of all kinds. These men should be placed at shipbuilding or allied war work; but we lack organization for such translocation of labor. The spirit of the building trades is against farm work, and the difference in wage scale constitutes an almost insuperable obstacle to the employment of country artisans as farm laborers. In addition, large numbers of men are engaged in labors that are to be regarded as relatively unessential, such as construction of public improvements and the manufacture of luxuries and dispensable commodities. Older men can return to manual work of light nature, setting younger men free for heavy work. Unfortunately, the common experience with casual urban workers on farms has not been satisfactory. During the past two years abroad, the supposedly superfluous men and boys were sent to the country to work, with unsatisfactory results. Soldiers should be sent from the cantonments to aid in seeding and bringing in the harvests; and they should also cultivate truck farms to supply themselves with fresh vegetables. If the soldiers can be used to cultivate truck farms behind the front in France, certainly they can be so employed about the cantonments in this country. The importation of labor offers little prospect of relief, since it is confined to small numbers of Mexicans of low intelligence and primitive experience.

The writer is not convinced that our agriculture can be maintained through a second year of war unless women in large numbers enter upon work. No one who recalls the work of women on the farms of Germany and France during the years before the war and has witnessed their herculean efforts during the war, has any doubts as to the abilities of women as farm laborers. Practically speaking, the peasant women of France and Germany bear the total burden of cultivation of the soil and of animal husbandry, both in management and actual physical work. This year the women of France will be aided by American tractors and Chinese coolies. With these peasant women, this work in war-time is but the intensification of their activities in peace time. But British women work upon the farms equally well, and they had little experience with such work before the war. Outdoor occupations seem especially beneficial to women and they soon learn to manage work animals and handle agricultural implements, Probably one-half of agricultural operations are adapted to the physique, strength and endurance of women. This is lower here than in Europe, on account of the larger use of heavy machinery in our agriculture. For women from city and town to go to the farms need not however mean working in the fields. The household work upon the farm, using the term in the wide sense that holds there, is almost as important as the work in the fields. Indeed, the problem of household service upon the farm is quite as urgent as that of field labor. Probably a million city women could accomplish more in farm homes than in field work. Of the 34,000,000 women in this country over sixteen years of age, only nine million are classed as engaged in gainful occupations—two million in manufacturing, and one and a half million in agriculture. Not all the remainder are housekeepers. When the women of this country realize the meaning of the war as do their sisters in England, France and Italy they will respond to the call for farm labor. In the most primitive period of the family life, the woman cultivated the soil while the man wielded the spear; and the generations of subsequent development have not

obliterated this relationship. The American women are still in the stage of relief work, which, necessary and valuable in itself, represents only the beginnings of the work the war will impose on them.

However desirable it may appear, in figures, for women to undertake farm labor, it cannot be denied that this does not naturally appeal to the American woman, who in this follows her British sister. Despite extreme need, only a quarter of a million women have gone to the land in England, while several times this number have entered industrial work. Of the million and a half women working on the land in this country, nearly all are of recent foreign extraction. The natural reaction here will be to have women release men from other occupations, setting them free to work upon the land. This ought to be much more easily accomplished here than in England, because in this country a large proportion of city men were reared upon the farm and understand farm work, which was not the case in England. This, however, requires organization, surveys and a certain control over labor, since it is not so easy to transfer a workman from one occupation to another as to call in an unoccupied person. The direct and easy transfer of urban workers to the farms would be to reduce the mercantile class of the country towns. Judging by European experience, it will be necessary within the next year to enroll five million additional women in work, if the military forces are doubled and the civilian and military necessaries are to be brought forth. Organization for agricultural labor must be so developed as to operate continuously, i. e., from 1918 into 1919.

There are but two motives upon which the appeal for increased agricultural production can be founded, patriotism and price. During the last year, despite deflection of labor, scarcity of fertilizer and reduction in machinery, the farmers increased the acreage of the eight principal crops over fourteeen million acres, six per cent. above the highest previous record. The only price stimulus, apart from the general experience that prices rise in war-time, was the fixed price for wheat that

was reflected in the large acreage of winter wheat. Although one hears a great deal about stimulating production by high prices, in the final analysis a fixed high price to the producer is in practice not much more than an insurance against loss; it rarely more than covers the increased cost of operations, and is usually lower than the natural price would have been. There are four methods of procedure applicable to the prices of agricultural products in war-time. The first is to allow prices to fix themselves, through the operation of the law of supply and demand, aided by speculation and the frenzied buying of frightened classes or nations. Not a warring or neutral nation in Europe has dared to follow this course, despite the fact that in theory it promises the highest production—since the farmer can pay any price for labor, fertilizer and machinery—because the prices of foodstuffs to consumers would exceed the buying power of probably half of the people. The second method is to stabilize the prices through control of the processes of distribution by prevention of hoarding, speculation, extortion and exploitation. This is the procedure in operation in this country. In addition to the fixed price for wheat, the third method is to fix prices for agricultural products at what might be termed an insurance level, offering the farmer a normal range of profit. This was the method adopted by the European nations in the second year of the war. The fourth method is to subsidise food production, either directly to the producer, or indirectly by state aid to the consumer. This last method has been adopted by the United Kingdom, France and the Central Powers, and represents a desperate compromise between farm and city.

War is a destructive process, the word is synonymous with loss, and in a state at war no one should expect to "break even." An occasional man or industry will accumulate a fortune during the progress of a war. But in a war of the intensity and dimensions of the present struggle, we must expect very material losses; and the best a man, a class or an industry can hope for is to minimize the losses. The patriotic farmer must realize that he labors at a disadvantage from

every point of view. He knows that he must work longer and harder. He must recognize that his working under disadvantages, working longer and harder, is his military activity, his part in the conflict, directly comparable with service at the front. The furrow of the field is the trench of agricultural warfare. The farmer has the right to receive the highest price compatible with the purchasing power of the industrial classes; he has the right to be protected against speculation, extortion and exploitation. But in the final analysis, he must farm primarily for reasons of patriotism and secondarily for reasons of profit. The peasant woman of France expects a high price for her wheat. But the intensity of her travail is the expression of her love for France. Agriculture in France is as intense and desperate as the fighting at the front. This super-exertion is the final force necessary to increase production of the soil in the state at war. When the agricultural forces of our country, reduced to 84 per cent. in number and to 75 per cent. in effectives, realize in the cultivation of the soil the patriotic mission the French women find therein, the output will not be 75 units or 84 units, but a hundred units.

What can be accomplished in increase in acreage under the stimulus of price fixation and leadership alone, is illustrated in the figures for the past year. That the planting of winter wheat was not still larger was purely the result of unfavorable climatic conditions. Increased acreage in the different crops cannot be attained by haphazard methods, but must be secured in accordance with correct agricultural practice, based upon competent surveys by men understanding local conditions. Even under such circumstances, choice may be limited by an arbitrary factor. Thus, the scarcity of seed corn for the coming sowing will tend to increase the acreage in small grain, even in opposition to correct agricultural practice. In the final analysis the weather is the factor of greatest influence; a large acreage in a favorable year converts a large crop into a bumper, while in a poor year a large acreage represents the margin of insurance. A material increase in acreage represents no inconsiderable capitalization. If we assume that the

cost of plowing each additional acre in Great Britain ($6.90) may be accepted as the cost of each new acre in this country, the increase in acreage in 1917 must have cost in round figures a hundred million dollars.

In war-time a new factor enters into our calculations, the element of utilization of food. With rice, wheat, rye and barley, crop yield corresponds to food supply, since milling facilities are equal to any crop. But with corn and oats, the limiting factor as food is not the crop yield at all, but the manufacturing facilities, that can convert only a small portion of the crop into foodstuffs; and, indeed, the human consumption of corn and oats represents but a trivial percentage of the crops. Our people have never consumed over 150,000,000 bushels of maize per year, and half of it was consumed upon the farms where it was grown. Yet maize saved our colonial ancestors from starvation and was the mainstay of the southern people during the Civil War. Of wheat, we have little. Our facilities for manufacture of foodstuffs from corn and oats are limited, and this hampers exportation of oat meal and corn products to our Allies. The Food Administration finds it imperatively necessary for our people to consume less bread grains and use instead products of rice, corn and oats and other cereals. But great difficulties have been encountered in keeping the markets supplied with the substitutes, partly because of limitation in manufacturing facilities, partly on account of reduction in shipping facilities. The substitution cereals are today more expensive than wheat flour. In view of the crop yields of oats and corn, this ought not to be so. But the caloric value of the soft corn is low, there have been losses in the fields and the crop is not so large when viewed from the standpoint of the expanding herds of cattle and swine. In a certain sense, man is now competing with the domesticated animals for the corn and oats, the farmer will sell these for foodstuffs only if the direct price is higher than can be secured when they are sold in the form of meat. The milling of corn is today inefficiently done as a whole and is capable of large and rapid expansion and this is being accom-

plished; this is not possible, however, in the manufacture of oat products. For these same reasons the manufacture of mixed flour, applied to our total flour production, would be difficult, though not impossible, but clearly advantageous. Now limiting factors have also entered into the manufacture of foodstuffs, namely, scarcity of tin, paper, bags, twine, glass, lumber and other adjuncts of manufacture.

A very important part in the increase of production of food lies in the war garden. Properly conducted, the garden yields material increments in food units. One of the most gainful features of the garden lies in the fact that the hands of women and children do the work. Also, it requires little machinery, no chemical fertilizer and almost no capital. Indiscriminate gardening represents waste of labor. Three directions of endeavor are to be followed, bearing in mind that the function of the garden is to supply vegetables for the use of the one family, or, at most, for local consumption, and not for sale. Perishable summer vegetables should be raised, sufficient to supply the needs of the family. Perishable vegetables should be dried or canned for winter use in the family. And, most important of all, staple winter vegetables, potatoes, onions, cabbage, and beans, should be raised in amounts sufficient to cover the needs through the winter. When we reflect that such vegetables often cover some fifteen to twenty per cent. of the food needs of the average American home, the great importance of the war garden is clear. The saving in railway tonnage represents no inconsiderable part of the total gain in the operation. The present high price and scarcity of potatoes are solely the result of defective transportation; had it not been for the potatoes from our gardens of last year, conditions would be much worse now.

Just as there are essentials and non-essentials in industrial commodities in war-time, so there are less and more essential foodstuffs. Transportation is here the chief criterion; the farther a foodstuff has to be hauled, the less essential it is if a nutritional substitute can be secured. When we recall that of our total diet, only one-fourth lies within the domain

of the indispensable, while three-fourths are susceptible of substitution with comparable nutritional returns, we realize how important it is for the people of each locality to consume the products of their own zone rather than those of some distant section. To the people of Iowa, the potatoes of Iowa are an essential, those of Georgia and Maine a non-essential. We must also realize that when freedom of selection from the markets of the world is restricted, the preparation of the food may be made somewhat more laborious and the attractiveness of the diet reduced. These are lesser war burdens, and must not be allowed to react upon the revictualment of the people.

Before the war we had practically ceased to be a food exporting nation. Now we must feed ourselves and we must also contribute to the feeding of our Allies. What we must contribute to the Allied cause may be statistically estimated. Prior to our entrance into the war the foodstuffs supplied by us to the nations who are now our Allies covered the needs of 15,000,000 people. At a conservative estimate, we are feeding twenty-five million people outside of the United States. This is tantamount to saying that our population has suddenly risen from 105,000,000 to 130,000,000, with a stationary agriculture. Can we increase this much in agricultural production this year? Under exceptional circumstances, with another year like 1915, it might be possible. But judged by the experiences of other nations at war, it will not be likely. Increase in production will probably not meet the situation, decrease in consumption must be invoked. Just as increased production requires labor and capital, so repression of consumption saves labor and capital.

Confronted with a large increase in our consuming population, through having assumed the feeding of a portion of the Allied peoples, reduction of consumption becomes a direct necessity. Under consumption, we included ingestion, waste and hoarding. Hoarding is increased in war-time and constitutes one of the most difficult problems in food administration. The experiences of the warring nations in Europe indi-

cates that a people can easily hoard a six weeks' food supply. Hoarding would not necessarily constitute a disadvantage, were it not for the fact that certain classes cannot hoard and that equitable distribution is always hindered by hoarding. Conversely, faulty distribution leads to hoarding. Perhaps the worst features of hoarding lie in the fact that the practice makes it impossible for a food administration to evaluate the figures of trade; we cannot tell if people are following conservation measures or not. Hoarding leads to class feeling and social unrest; and, as previously remarked, in periods of crisis, the subsistence and nutrition of a people are those of its poorest-fed class.

Waste is the worst enemy of conservation, and in the nation as in the individual, is the especial attribute of youth. Waste occurs along the entire line of processes, from the producer to the table of the consumer. It is not yet possible to give a clear estimate for the American people (though it has been estimated that the American people wasted a billion dollars' worth of food in 1916), but we may use the Germans as an illustration. According to the best judgment of German statisticians, the food provided to that people corresponded to about 3,200 calories per person per day. The consumption was not over 2,700 to 2,800 calories, the physiological need to maintain normal weight not over 2,400. In other words, the supposedly thrifty German people wasted normally food worth four or five hundred calories per day, or fourteen per cent. The need was twenty-five per cent. below the consumption. In other words, before the war the Germans dissipated in waste and luxury one-fourth of their food supply. Perhaps the most striking thing about waste is its apparent immutability under ordinary circumstances. If a people accustomed to consume 3,200 calories worth of food daily, of which only 2,700 are ingested, is suddenly reduced to a supply of 3,100, the reduction of the hundred calories will fall upon the ingestion, and the waste will be maintained. In other words, our habits of waste are more fixed than our habits of eating. Only a campaign of education will enable a people

to place the reduction upon the fraction of waste and keep the ingestion normal. Waste is increased by faulty distribution, especially by failure in transportation. Waste does not by any means always diminish as prices rise. Waste may be effectively opposed by educational methods, and there is good evidence that our waste in foodstuffs is much lower today than it was nine months ago.

Repression of ingestion is the final step in the conservation of food. Through reduction of ingestion we stretch the available supply in time, and thus repression means conservation. Repression may be divided into three stages. In the first, the reduction does not result in material loss of body weight. In the second, there is material reduction in body weight, but with retention of health and working strength. In the third stage, health and working strength are no longer maintained, and the subjects have entered the zone of subnutrition. The German industrial classes have been in the second stage for nearly two years; they are trained down fine, but have statistically normal health and maintain the various operations of industry. Possibly Germany may have now entered into the shadow of stage three, but we have not yet trustworthy evidence that this is the case, except those over middle-age.

Repression is either qualitative or quantitative. By qualitative repression, we mean the maintenance of the total intake in protein, fat and calories within normal ranges, but with the predominance of certain foodstuffs and the diminution of others; in a word, substitution. By quantitative repression we mean reduction in intake in terms of protein, fat or calories. Our people are now under the necessity of qualitative repression, i. e., substitution. We must consume less wheat and subsist instead in part upon other equally nutritious cereals. We must eat less meat, fat and sugar, but more fruits and vegetables. Practically all of the inhabitants of the western hemisphere are under qualitative repression, the diet being deficient in one or more directions. All of Europe, including the neutral nations, is laboring under both qualitative and quantitative repressions; the normal choice of foods is re-

stricted and the quantities are reduced. The reduction with the industrial classes of Germany has reached the level of two thousand calories intake per day, with not over fifty grams of protein and twenty-five grams of fat.

The toleration of such a degree of reduction in intake of food has been a revelation to even the scientific world, familiar with the mechanistic point of view. Placed in popular language, we explain the phenomenon with the statement that when a body is reduced in weight, it remains just as efficient an organism for work, but requires less for upkeep. A man reduced from 70 to 60 kilo body weight, will work just as well as before, but will need some five hundred calories less per day. When a body loses weight, the saving in upkeep, or in other terms, the gain in foodstuffs, lies in three fractions. The fat of the body consumed represents so much fuel; the heat production of the resting body is lowered; and the work of carrying around the superfluous weight is saved. If fifty million adults in this country were to be reduced ten pounds each in body weight, the consequent saving in foodstuffs would equal seven per cent. of our food supply. Viewed as a unit, every prosperous people is obese. Trained athletes expect to lose weight, and nations at war must expect and indeed desire the same result. This means, of course, lowering the standard of living. But our pre-war standard was upon the plane of luxury which, whatever its value in peace time, is a positive drag in our present struggle.

Now, without going to the limit of bearable repression in intake of food, it is clear that a people may safely reduce the consumption of food twenty-five per cent., this including reduction of waste and repression in intake. The gain that is thus obtained is probably more than can be secured by increased agricultural production in war-time. We must, of course, exert strongest efforts for increased production, but we must expect to supplement these by the savings achieved through reduced consumption. Not a nation in Europe, including the neutral nations, has had a normal crop since the first year of the war. During the coming six months Europe

will live on less than three-fourths of the normal food supply. What the future holds for production, theirs and ours, we do not know. We must not expect for ourselves and our Allies next year more than a minimal normal food supply; we must share with them fairly, for their burdens are heavier than ours. We may secure harvests in excess of mathematical expectations. We will be fortunate if still greater repressions are not made necessary. War is a state of material destruction. Every alternative is a choice between material evils.

One final observation remains to be made. Repression in the consumption of food cannot be successfully accomplished without repression in the use of other commodities. We cannot save food unless we save other necessaries; emphatically, we cannot save in food unless we save in luxuries. This rule of action is true for reasons of industry and trade, as well as for reasons of psychology. There is no saving of food without the possession of a sacrificial consciousness, which, once installed, governs the entire life of the individual. The sense of saving is directly proportional to the intensity of the spirit of winning the war. The actions of each individual must, in the final analysis before the bar of conscience, be judged as the expression of the will to do.

AMERICA'S INTERNATIONAL DIPLOMACY

By James Curtis Ballagh

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Perhaps there has never been a time in our political history when calm and sane judgments on our international policy are more important to our future career in world affairs than the present moment. Perhaps there has never been a time when men who are "otherwise minded," or, in fact, "otherwise purposed," than to follow the policy long ago irrevocably adopted by the national administration should more than ever before set aside, once for all and completely, their personal desires or feelings and adopt whole-heartedly a loyal, outspoken advocacy of the will of the majority. America has never entered any war without a strong and serious opposition. The "anti"-party has always been a conspicuous factor in our politics, domestic and foreign. But in this period of world strife threatening the very ideals and bases upon which the American Republic was founded and rests, ideals whose continuance and vitality are essential not only to its existence, but to its capacity to save and uplift other nations of the world, an opposition whether quiescent or active, that in times past was a fault, has now become a crime nigh akin to treason.

The staff correspondent who lectures the State and War Departments on their alleged failures, who instructs them as to their duties as he conceives them, adjusts our relations with Japan and Russia and the rest of the world not as diplomacy makes feasible but as he thinks they should be; the smug professor so secure in his job, so open-minded in his scholarship as to defer all opinion and judgment to the end of time, who can take no action and say no word in support of his government; the learned editor who finds we have no ships, can build none till the war is over, and therefore face a crisis and certain defeat by Germany unless the manifestly impossible be at once accomplished; these and like calamity-

howlers are the prophets of obstruction, not construction. They make for pessimism, Germanism—not for idealism and Americanism.

It is scarcely conceivable how men of ordinary intelligence, much less leaders of public opinion on the rostrum or in the press, or the teachers of youth in our schools and universities who have shared all the benefits of American idealism, can render a half-hearted, colorless and negative support to a government straining itself to the utmost in its military, financial and moral power to establish justice and uprightness as the rule of conduct in international politics. Never before, in the history of the world has such a thing been attempted, has a government and a nation put its whole vital force and energy behind the establishment of such a world ideal. Never before has the United States risen to such a high conception of its international obligations and opportunities for true political altruism. Neither from enemy nor from friend has come since our entry into the European War a criticism of our ultimate purposes that would demand serious attention from a political thinker. So clear and undeviating has been the road we follow, so frank and avowed our international purpose, that friend and foe alike have recognized and admitted that new principles and new constructive bases for ultimate world adjustments have been brought forward by America's entry into the war. From the camps of both groups of Entente Allies has come repeated recognition of a new force in international policies induced by the United States; and from both the Central Powers, as well as from our co-belligerents, have come expressions evidencing a desire to approximate some, if not all, of the idealistic pronouncements of the Executive of the United States.

America's dominating position in world diplomacy has been so rapidly acquired and is so much the product of a single administration, that the full significance of our present status is not generally recognized nor perhaps admitted by our own citizens, although it is more apparent to outsiders. It is based partly upon potential force, but to a greater degree upon moral

principles whose categorical imperatives make effective appeal to the conscience of modern civilized nations. To exemplify these points some retrospect is necessary.

Woodrow Wilson, elected President of the United States in 1912, as a Progressive, took his seat in 1913 as a Democrat. That is to say, two main factors: (1) the Progressive campaign of Theodore Roosevelt disrupting Republican solidarity and making the Taft campaign futile, and (2) the pre-election advocacy by Wilson of many of the most practicable features of the Progressive program secured his election. But he was, popularly speaking, a minority President. He polled something like a million and a third less votes than the combined votes for Roosevelt and Taft. Yet he found in Washington, ready to do his bidding, or to oppose him, a Democratic Congress, Democratic in both houses, a condition of affairs that had existed for democracy only once before since the Civil War, namely, in the Fifty-third Congress. It is not surprising that in such a situation party harmony and party platform should for a space occupy Executive attention; the experience of Presidents Cleveland and Taft, with "Congress on their hands," was sufficient warning that DISCRETION was the better part of presidential valor. The appointment thus to the chief place among his advisers of Mr. William Jennings Bryan, the man who had delivered over democracy to the Progressive candidate at the Baltimore convention, was a foregone but very unfortunate conclusion, as our international complications soon demonstrated. The Democratic platform and the Democratic campaign of 1912 had been formulated and fought on questions of domestic, not of foreign, policy. In fact, the references to foreign policy in platform or campaign, outside of an expression of our attitude to the Philippines, were insignificant in the extreme. As vital as were our foreign relations with Mexico, as necessary as was some commercial adjustment with Russia, agreement with Colombia, or pronouncement on "Dollar Diplomacy," the faces of the politicians of all parties were turned to what they regarded as pressing internal and domestic affairs.

It is an open secret that many, both Democrats and Republicans, would have supported Theodore Roosevelt with their votes had they not firmly believed his aggressive nature would have at once forced the intolerable relations with our nearest southern neighbor, Mexico, into a state of open hostilities. These men, alive to the pressing nature of our foreign policies, felt, on the whole, more safe with the judicious Taft or the untried Wilson. Wilson, the first real scholar in history and politics to attain to the Chief Magistracy, was by constitution and education a reformer, a man combining elements of strong traditional American conservatism with the sanest and most progressive ideas of our political life. It was as president of Princeton University, and later as reform governor of a boss-ridden American Commonwealth, that Colonel George Harvey, of *Harper's Weekly*, discovered Wilson. In February, 1906, and again in March, 1911, in addresses before the Lotus Club, of New York, and the Hibernian Society, of Savannah, Georgia, Harvey proposed his presidential candidacy as that of "a man combining the activities of the present with the sobering influences of the past—Woodrow Wilson, the highly Americanized Scotch-Irishman, descended from Ohio, born in Virginia, developed in Maryland, married in Georgia, and now delivering from bondage that faithful old Democratic Commonwealth, the State of New Jersey."

Wilson, scholar, reformer and essentially progressive, himself used in a presidential campaign speech in 1912 these words: "The force that is behind the new party that has recently been formed, the so-called 'Progressive Party,' is a force of discontent with the old parties of the United States. It is the feeling that men have gone into blind alleys often enough, and that somehow there must be found an open road through which men may pass to some purpose." With this high note of "purpose" in mind, the President not only with great rapidity secured a vast amount of reform legislation of benefit to the nation, more or less connected with the program of his party politicians, but he securely, though surely,

blasted an "open road" from the "blind alleys" of party precedent and traditions to a mastery and complete headship over party politics and leaders, and led a National Congress, willing or unwilling, to a larger outlook on the destinies and responsibilities of the United States among the nations of the world.

It has become increasingly manifest to thinking observers that the statesmanship of Woodrow Wilson is of no common order; that he has seen with prophetic vision the part that America is to play in this world war and resultant peace; that he has been a leader of men, of his party and of the opposition, and not a follower; that with the courage and fearlessness of a religious enthusiast he has set moral doctrines above political, moral strength and political righteousness above the force of arms or brains. In the political world of today he stands recognized as the one great Liberal, whose principles and doctrines are studied alike by friend and foe. Quietly, and with patience, through a long period of trial and stress, such as few Presidents have been called to endure, has he awaited the judgment of men, and now from England and France, and even from Austria and Germany, has come his reward.

However slow the United States was in coming to a sense of its obligations in the name of civilization to take a stand with those nations of Christendom that claimed to be and were defending human liberty, the sanctity of treaties and common justice against the doctrines of force and might-makes-right of modern Germany, once that America took that stand on the doctrines of the sanctity of international law and common humanity, recognized by God and man, and non-aggrandizement, she became heir to a position of command and definition of policy in the international struggle. Few, perhaps, realize to what extent this leadership has gone. As Germany and Austria have sunk in the moral scale, the United States has risen. With each fresh moral obliquity of the Central Powers, the uprightness of the United States has stood out in bolder relief. What Goethe so well said, "The

Prussian was born a brute and civilization will make him ferocious," received its emphasis in every phase of German relations with America after the ascendancy of the Von Tirpitz-Hindenburg-Ludendorf régime. Whatever little moral restraint, good manners and respect for the world's opinion had been manifested by the Germany of the weak Von Bethmann-Hollweg ascendancy was ruthlessly cast to the winds by the piratical savagery of this motley and brutish crew, whose appreciation of philosophy and sentiment was that of a Roman gladiator, whose recognition of the rights of neutrals and of friends was even less than they accorded to their enemies.

It was at this juncture in world affairs that the commanding genius of Woodrow Wilson made itself conspicuous. As the leader of the leading neutral in the war he threw the whole moral and physical weight of his nation behind a new doctrine in modern world politics, the doctrine of humanity. It is a curious coincidence worth noting that the word *humanitas,* humanity, received its first currency under the leadership of a Roman philosopher, emperor and general, Marcus Aurelius Antonius, who, for eight successive years, beat back German savagery on the Danube to save the cause of Roman civilization from the destructive force of the barbaric German horde. This philosopher-emperor, like the philosopher-President, a teacher and leader of his people, detested war, to quote the words of his historian, "as the disgrace and calamity of human nature, but when the necessity of a just defence called him to take up arms, he readily exposed his person to eight winter campaigns on the frozen banks of the Danube, the severity of which was at last fatal to the weakness of his constitution." (Gibbon, Decline and Fall of the Roman Empire, 195.) Yet down the ages has rung the political philosophy of his "Meditations," composed in the tumult and cold of that camp on the German front, "Mankind are under one common law; and if so, they must be fellow-citizens, and belong to the same body politic. From whence it will follow that the whole world is but one Commonwealth." (Med. IV, 4)—"This brotherhood of man will lead us to strive for the com-

mon good and reckon nothing else our own advantage." . . . "That which is not for the interest of the whole swarm is not for the interest of the single bee." (Med. VI, 54.)

What clearer prototype from the past need be sought for the Wilson doctrine of universal peace supported by the internationalism of a League of Nations!

But to Wilson and to the United States first have the vision and the responsibility come of realizing the philosopher's dream. Of all the nations, the United States, and of all the executive leaders of modern nations, those of the United States have been the first to put forward the doctrine of permanent and lasting peace through a federation of nations, whose basal principles of union are those of common liberty, justice and uprightness in all international relations.

The day the Lusitania was sunk by Germany, and a few hours before the news reached America a distinguished German professor of a German university, supported by the state, spoke in the precincts of this University in disparaging terms of international law as a code of conduct between the nations, and took unequivocally the position of his chancellor that the law of necessity had supplanted international law, which was now non-existent where inconvenient. From his interesting lecture, delivered from this very platform, his audience dispersed to read in the evening papers of his government's astounding disregard of both the rights of nations and of man in the cowardly torpedoing of an unarmed merchant ship bearing the hitherto sacred lives of over 1,000 non-belligerent neutrals and enemies, many of them women, children and infants, and 100 Americans. The crime was so dastardly, so unexpected by any sane, unless knowing, intelligence, that it benumbed our consciousness. The weary weeks and months of diplomatic discussion that followed, marked by an administration's patience and forbearance in the hope of peace, that appeared to the American public almost to speak the craven and poltroon roused the "hyphen" to the zenith of his disloyalty to the ideals of his adopted land in the defense of those of his fatherland. All this served but to crystallize and solidify American

thought and to enable the government itself to grow in knowledge of the real aims and dastardly designs of a government to which even in the first Lusitania note it could appeal on the grounds of a sense of justice and humanity "hitherto assumed by the Imperial German Government in matters of international right and particularly with regard to the freedom of the seas." (Secy. Bryan to Ambas. Gerard, May 13, 1915, First Lusitania Note—Dip. Cor. Eur. War, No. 1, p. 75.)

The act was branded by Mr. Bryan as "unlawful and inhumane," and Germany was warned that the United States would not "omit any word or any act necessary to the performance of its sacred duty of maintaining the rights of the United States and its citizens and of safeguarding their free exercise and enjoyment," but the distinct opportunity for German disavowal of the act was held out regardless of the preceding *Falaba, Cushing* and *Gulflight* incidents in which American lives or property rights had been successfully attacked by this same "enlightened" government.

In a second Lusitania note of July 9, 1915, Acting Secretary Lansing directed the attention of the evasive Imperial German Government (notes of May 28 and June 1, 1915) in the most pointed manner to the fact that "the government of the United States is contending for something much greater than mere rights of property or privileges of commerce. It is contending for nothing less high and sacred than the rights of humanity, which every government honors itself in respecting and which no government is justified in resigning on behalf of those under its care or authority." He "solemnly renews" the warnings of Secretary Bryan's note (May 13, 1915) and "relies on" the "representations" made in it upon three things: "Upon the principles of humanity, the universally recognized understandings of international law, and the ancient friendship of the German nation."

The futility of notes and the fact that there was left no moral sentiment amongst the rulers and directors of the policy of the Imperial German Government to which a nation not in arms could appeal was disclosed in that government's reply

on the 8th of July, 1915 (Dip. Cor. Eur. War Ser., No. 2, 175). After digesting this, Mr. Lansing, now Secretary of State, vice the retired pacifist, Mr. William Jennings Bryan, declared it "very unsatisfactory, because it fails to meet the real differences between the two governments, and indicates no way in which the accepted principles of law and humanity may be applied in the grave matter in controversy, but purposes, on the contrary, arrangements for a partial suspension of those principles which virtually set them aside." The contemptible, unfrank and insincere attempt of the German government to excuse its misdeeds and manifest sins against neutrals by its pointing to real or alleged faults in its antagonists against the same was masterfully counter-checked by President Wilson and Secretary Lansing. With the mask concealing German purpose now off and the repeated attempt to embroil the United States with England, as Napoleon I. had succeeded in doing in his byplay on the English Orders in Council, the third Lusitania note, of July 21, 1915, could definitively point out to Germany "that the Government of the United States cannot discuss the policy of the Government of Great Britain with regard to neutral trade except with that government itself, and that it must regard the conduct of other belligerent governments as irrelevant to any discussion with the Imperial German Government of what this government regards as grave unjustifiable violations of the rights of American citizens by German naval commanders. Illegal and inhuman acts, however justifiable they may be thought to be against an enemy who is believed to have acted in contravention of law and humanity, are manifestly indefensible when they deprive neutrals of their acknowledged rights, particularly when they violate the right to life itself."

And then follows this passage—which to any power less drunk with insanity and less obsessed with its false greatness and the fake and unreliable information from the unworthy Bernstorff as to German-American disloyalty and influence on our government, would have supplied a sobering draught—"If a belligerent cannot retaliate against an enemy without

injuring the lives of neutrals, as well as their property, humanity, as well as justice, and a due regard for the dignity of neutral powers, should dictate that the practice be discontinued. If persisted in it would in such circumstances constitute an unpardonable offense against the sovereignty of the neutral nation affected . . . it cannot consent to abate any essential or fundamental right of its people because of a mere alteration of circumstance. The rights of neutrals in time of war are based upon principle, not upon expediency, and the principles are immutable." The note continued and concludes with a potent warning that the Government of the United States was impelled "to press very solemnly upon the Imperial German Government the necessity for a scrupulous observance by neutral rights in this critical matter. Friendship itself prompts it to say to the Imperial Government that repetition of the commanders of German naval vessels of acts in contravention of those rights must be regarded by the Government of the United States, when they affect American citizens, as deliberately unfriendly."

A nation whose conscience was dulled with repeated crimes, whose fundamental doctrines were the divine supremacy of Allah, The State, and of Mahomet, his vice-regent and prophet —the Kaiser and the Junker, whose one rule of conduct as expressed by Nietzsche and Treitschke was the will-to-power —to might—to profit and not to justice or to right; who had cast off the trammels of all law for the free doctrine of expediency and necessity—such a nation could scarce, by simple men thousands of miles away, who believed in the Germany of olden time or even of their own student days, be disciplined into good behavior on doctrines so ideal, so unreal and impracticable as the common law of justice and humanity, to Germany as unintelligible as the concepts of Rousseau or Montesqieu.

With all of Wilson's reassertion of idealism in his speeches and his state papers educating the American mind up to its glorious heritage in the "principles of human right" and "service to mankind," he appeared alike to the hyphenated

American and to the German Foreign Office and Chancellery but a phrase-monger—a voice of one crying in the wilderness of unrelieved American materialism, of selfish money-getting pacifism. Through the misrepresentations and misconceptions of von Bernstorff the efforts of Gerard at Berlin were rendered futile and all through the tiresome and anxious exchange of diplomatic notes up to and through the Sussex ultimatum and compromise, and on to the unregulated and ruthless submarine campaign wrongly ascribed in America to von Tirpitz alone, but now frankly admitted by Bethman-Hollweg as his purpose too in good time, there never was a chance of avoiding war with honor, or of impressing the German Government with a spark of the idealism with which the President was beginning to impress America and the rest of the world. All the diplomacy that has come to light has now made this clear. From the beginning the Hun had a purpose. America, as well as England, stood in the way of this purpose and must be pushed aside by diplomacy if possible, by force if need be.

The disclosures of Ambassador Gerard, as given to the public in the Philadelphia *Public Ledger* and other channels, have shown the trickery and chicanery of those who posed as friends of America in official circles, of the growing popular and official hate of Americans even of German extraction, of the growing suspicion in his own mind that Germany intended to square accounts with the United States to the full when once she had finished England.

What profited it that President Wilson again in the Sussex note of April 18, 1916, rang the changes on the "rules prescribed by law," "rules founded on the principles of humanity, established for the protection of the lives of non-combatants at sea," upon the "manifest principles of humanity—long-established, with the approval and by the assent of all civilized nations," and closed with the threat of the severance of diplomatic relations "unless the Imperial Government should now immediately declare in effect an abandonment of its present methods of submarine warfare against passenger and freight-

carrying vessels!" (Dip. Cor. Eur. War Series, No. 3, 241). What profited the backdown and insincere pledges of the Imperial German Government and its early resumption of ruthless submarine warfare on friend and foe alike, and the coming of the United States into its predestined heritage of warfare for "the sacred and indisputable rules of international law and the universally-recognized dictates of humanity?" No more fitting answer can be given than is found in the President's own words in his Flag Day address, June 14, 1917:

"In the United States we are accustomed to deal with facts and not with sophistries; and the great fact that stands out above all the rest is that this is a People's War, a war for freedom and justice and self-government amongst all the nations of the world, a war to make the world safe for the peoples who live upon it and have made it their own, the German people themselves included; and that with us rests the choice to break through all these hypocrisies and patent cheats and masks of brute force and help set the world free, or else stand aside and let it be dominated a long age through by sheer weight of arms and the arbitrary choice of self-constituted masters, by a nation which can maintain the biggest armies and the most irresistible armaments—a power to which the world has afforded no parallel and in the face of which political freedom must wither and perish."

What, then, is the greatest and most significant influence of the America of today in world politics? It is an international idealism, a plea not only for the observance of the old and recognized rules of international right founded in justice and humanity, but also for a revision and reconstruction of the whole code in the light of a magnificent altruism, the advance of all humanity, the uplift alike of victor and of vanquished whoever they may be, Central Powers or Allies; the advance of the boundary line of human liberty resting on justice, observance of law, recognition of moral right in political life, and the consent of the governed to government, and international fellowship and brotherhood.

Former President Eliot, of Harvard University, has somewhere said that the chief contribution of America to civilization is religious freedom—the divorce of church and State. Modern America in its recognized diplomatic leadership in world affairs today would add another contribution, the new freedom of democracy. It presupposes and guarantees the destruction of the Romanic and Germanic idea of the State, the imperial State, a political concept without reality, except such as has been given it by the greed and thirst for alien territory and domain by some national State—some State that has a military machine, and autocratic or monarchial dominance of mind and body which supplies the force and exerts the will that can enslave the lives and property of men. It is a "new freedom" indeed that Wilson has preached, but not merely of a domestic order. It is a new international order he proclaims, the closing of the gates of the Temple of Janus for time, a peace of enlightenment where enemy and friend will unite for self-government and human betterment, where the principles of self-determination and non-interference will protect the weak against the aggressions of the strong, defended by a concert of Powers stronger than the strongest.

A well-known New York editor, former President Taft, William Jennings Bryan, a body of thinking American internationalists, Sir Edward Grey, Lord Bryce and many others besides Wilson have had a part in visualizing and interpreting this new doctrine in international life, but none has been in such a position of command or endowed with such a gift of far-seeing statesmanship as the man who has put over the *American Idea in the World.* How different this is from *Der Deutsche Gedanke in Der Welt* may best be seen not from our words, but from those of an Englishman who has had some time for observation.

In an address before some twelve hundred members of the Merchants' Association of New York on March 7, Lord Reading, the special Ambassador of Great Britain in the United States, used these words in characterizing the new position of America as a great world Power:

"Once again you will have attained the high ideal; you will have taken this time a place among the nations which, possibly, many of you never thought would happen, but you will have done it holding on high the banner of liberty, calling to all to follow that banner—pointing out that when America does fight it is not for aggression, it is not for territory, it is not for conquest, it is not for vanity or for any dynasty, but that it fights alone for liberty for the benefit of humanity."

Nothing is less true than that the United States entered the war with any selfish purpose or that it intends to come out of it with one. The old order of diplomacy, the European congress of the Congress of Berlin type, presided over by the evil-trading genius of a Bismarck and a Disraeli who partitioned the world in the interest of two nations has, as far as America is concerned, passed away. The new diplomacy must have a broader scope, a more universal and world-befitting end. From the time that President Wilson startled the world, and most of all the Allies, by his demand for a definition of war aims and by the assertion of the principle "Peace without victory," the moral leadership of his strange new liberalism was established. He has never lost the ascendancy then gained. His words have been those most dreaded and most studied by the Central Powers—those that have taken all their shrewdness and ability to answer. It was his answer to the Pope that became by its force the adopted answer of the Entente Allies; it was he that answered Czernin and von Hertling and drove the wedge between them; it was Wilson whom they poorly strove to answer and his will they are compelled to meet; it was his voice that evoked some echo in faraway and troubled Russia; it is his democracy that questions and delays and stays the sweep of unpledged empire in Siberia[1];

1.—In a communication recently made to the Government of Russia, President Wilson said, among other things: "In view of the approaching visit of the American delegation to Russia to express the deep friendship of the American people for the people of Russia, and to discuss the best and most practical means of co-operation between the two peoples in carrying the present struggle for freedom of all peoples to a successful consummation, it seems opportune and appropriate that I should state again, in the light of this new partnership, the objects the United States has had in mind in entering the war. . . . The

it is America that has led to unity in warring counsels through Versailles. As military leadership formerly lay with England and with France, diplomatic leadership has fallen to the United States, and greater is its responsibility in the bloodless than in the bloody battles.

I have dwelt on America's influence in international politics in the sphere of ideals because it is greatest here, though her contribution in the realm of the material is by no means small. For the telling of this story the time is not yet ripe. Ideals are both the forerunner and the conditions of action and accomplishment—of great accomplishment if we are but true to our ideals!

I can conclude with no more fitting words than those of a clear-seeing, forward-looking American, Mr. George Creel:

"Vision, spirit, ideals, without the clew afforded by these dream words, the United States stammers and is unintelligible. Democracy never has been, and never can be, other than a theory of spiritual progress, and those who view it as a mere program of materialism place their feet in a blind path. The slightest study of human progress makes plain that the things which count in the evolution of civilization to higher levels

position of America in this war is so clearly avowed that no man can be excused for mistaking it. She seeks no material profit or aggrandizement of any kind. She is fighting for no advantage or selfish object of her own, but for the liberation of peoples everywhere from the aggressions of autocratic force." (Official Bul., Wash., Mar. 19, 1917.) How sincere and appropriate was this statement of war aims and the fight against autocracy appears from the following message of President Wilson to the Russian Congress of Soviets, which was given to the American press on March 12, 1918:

"May I not take advantage of the meeting of the Congress of the Soviets to express the sincere sympathy which the people of the United States feel for the Russian people at this moment, when the German power has been thrust in to interrupt and turn back the whole struggle for freedom and substitute the wishes of Germany for the purpose of the people of Russia.

"Although the Government of the United States is, unhappily, not now in a position to render the direct and effective aid it would wish to render, I beg to assure the people of Russia through the Congress that it will avail itself of every opportunity to secure for Russia once more complete sovereignty and independence in her own affairs and full restoration to her great role in the life of Europe and the modern world.

"The whole heart of the people of the United States is with the people of Russia in the attempt to free themselves forever from autocratic government and become the masters of their own life.

"WOODROW WILSON."

are ever and always those flames of the spirit that blaze without regard to intellectual formulas or certainties of profit.

"When has greed ever entertained the visions that turned arid wastes into smiling orchards, spun steel gossamer across dizzy chasms, sent airships aloft, or has given new lands to the foot of civilization? When did the multiplication-table mind ever free a captive, crush an evil, liberate justice, or bless the world with a larger happiness? All that is fundamentally big and fine has been the work of so-called 'visionaries' who ran the gantlets of ridicule and opposition. In the outset every great movement, every wonderful idea, is a dream, and democracy was evolved to make these dreams come true."

A JEWISH STATE IN PALESTINE

By David Werner Amram

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On November 3, 1917, Mr. Arthur J. Balfour, British Secretary of State for Foreign Affairs, speaking for the British Government, said: "His Majesty's government views with favor the establishment in Palestine of a national home for the Jews and will use its best endeavor to facilitate achievement of this object; it being clearly understood that nothing shall be done which may prejudice the civil and religious rights of the existing non-Jewish communities in Palestine."

To those unfamiliar with the history of the Zionist movement this declaration caused profound surprise. It has since been followed by official statements of approval by the responsible heads of the governments of France and Italy. The Pope has, according to well authenticated reports, expressed himself as not displeased with the British program, and the President of the United States has approved as far as is consistent with the state of peace that still exists between this country and Turkey. How shall we explain this declaration in favor of national recognition of a people who have for nearly two thousand years been scattered throughout the world? Why should Jews establish a national home? And why, assuming that there is reason for the recognition of Jewish national aspirations, should they be satisfied by settlement in Palestine rather than in British East Africa or elsewhere? For the determination of these and other important questions involved in the British declaration, we must go back through intermediate stages to the beginning of the Christian era. The Balfour statement would never have been made had there not been in existence the Zionist organization, with its insistent demand for the political recognition of a homeland in Palestine for the Jewish people. The Zionist organization would not have come into being but for the co-

existence of three principal direct causes, the anti-Semitic movement, the existing agricultural Jewish colonies in Palestine and the consciousness of the right of self-expression and self-determination of the Jewish people, the latter a corollary to the nineteenth century nationalism which was one of the consequences of the French Revolution. The Palestinian colonization of the nineteenth century was also partly the result of the anti-Semitic movement in Europe, but found its real inspiration in the eternal dream of a restored land of Israel where the Jew might find peace to live his life according to the law of his God, freed from the perpetual hindrance of a hostile environment, and whence again his law might go forth as of old, to be a light unto the nations. Anti-Semitism was a German pseudo-scientific formulation of what in coarser language may be called Jew-hatred. German philological, theological and sociological science found a reason for the vulgar phenomenon of Jew-hatred in this, that the Jew is a member of a race essentially inferior to the Aryan race; that the Teuton is the flower of the Aryan race and that the essential superiority of Aryan civilization, particularly as developed in Germany, is threatened by the presence of the Jewish people who would debase it to their own low level. In order to preserve the nobility of German race and culture, the Semite and his influence must be removed. The proofs went so far as to demonstrate that Jesus, whose religion was by most people believed to be followed in Germany, was, in fact, not a Jew, but an Aryan, a blond, blue-eyed man probably of the same stock as the masters of Germany. Jew-hatred runs through history in a practically unbroken current back to the begining of the Christian era, and along with it there runs the similarly unbroken current of hope of the outraged and exiled Jew for a return to the land of his fathers, where he believed that he might live that ideal life which his prophets, poets, liturgists and philosophers pictured, in which all the finer elements of man might find freedom for expansion and growth. The outcast Jew felt himself chosen to be a witness for the ideal life of man, and Palestine or

Eretz Yisrael, as he called it, was the earthly spot in which the miracle of the world's redemption through divine guidance was to be performed. Therefore it was that he longed for the land during his life in the ghettos of Europe. And this eternal dream could not have been dreamed had not the Jewish state and the temple been destroyed in the year 70 and the Palestinian Jews torn from their native soil and scattered throughout the world. It is true that there were large numbers of Jews, perhaps a majority, living out of Palestine at that time, but Palestine was the land in which the nucleus had remained through which the group life could be continued and without which the extra-Palestinian Jews had no possible permanent center of religious and spiritual inspiration. It is therefore back to the year 70 that we must go in order to understand the British declaration of 1917.

The Jewish state fell in the year 70 of the Christian era, destroyed by the Roman arms. For about two generations after the destruction of the temple and the fall of the state, rebellion broke out among the Jews at different points in the eastern dominions of the Roman Empire in attempts to shake off the Roman yoke. The last and most important of these was in the year 133 under Barcochba (the son of the Star) when the Jewish state was restored for about two years, at the end of which time the rebellion was put down and with it the last hope of restoring the state by force of arms. The hope of a restoration never died, but as time went on and the impossibility of reconquest of the land became manifest, the Jewish people consoled themselves for the loss of their national independence by faith in their ultimate restoration and redemption through special divine intercession. They thought of a return to Palestine, not as a vindication of their right to political independent existence but as a necessary concomitant of their recognition as a people peculiarly chosen to be the recipients of divine favor in being made the bearers of a revelation, the acceptance of which should redeem the entire world. The restoration of the people to the land was intimately united with their conception of their religious mission, if one

may use this much abused and misunderstood word. The Jewish concept of the "chosen people" is not at all, as popularly supposed, that of a people impressed with its virtues, glorying in its manifest superiority and culture and planning or striving to impose its views on all the world. Such a concept of a "chosen people" is that of the modern Christian-Germanic state against which the world has taken arms. The Jewish concept is well expressed in these words taken from the ritual for the Day of Atonement and New Year's Day: "Thou hast selected us from all the peoples. Thou hast loved us . . . and thou hast sanctified us with thy commandments . . . But by reason of our sins we have been banished from our country and removed from our land, so that we are no longer able to fulfill our duties in thy chosen house. May it be thy will, eternal our God and God of our fathers, merciful King, to have mercy upon us and upon thy sanctuary in thy abundant mercies and to rebuild it speedily and magnify its glory. Our Father, our King, reveal the glory of thy majesty unto us speedily and shine forth and exalt thyself above us in the sight of all living and gather our scattered ones from among the nations and our dispersed ones from the ends of the earth and bring us near unto Zion, thy city, in rejoicing and unto Jerusalem, thy holy house, in everlasting joy, that there we may offer thee the required sacrifices . . . in love according to the commandment of thy will as thou hast written in thy law by the hand of Moses thy servant." These passages fairly illustrate the doctrine of Israel's choice and also the doctrine of its redemption. Israel was chosen to be the servant of God and to obey his commandments. Israel was not chosen to go out and reform the world. According to Jewish doctrine non-Jews and Jews are equal if they obey God's law of righteousness. Says Rabbi Meir, a distinguished Talmudical authority, "the gentile who observes the law of God ranks with the High Priest," and, as another said, "the righteous of all the peoples of the earth will partake of life everlasting." The Jew does not know of a heaven exclusively reserved for people who believe as he

does. His notion of heaven is as of a place where all people who do right and act justly live together. This is the highest conception of heaven on earth that is possible, and perhaps, therefore, the highest conception of heaven in the abstract. In these dicta of Jewish religious philosophy lies the negation of all doctrine of overlordship and mastery. They teach, as the rest of Jewish theology and law teach, the essential democracy of human life. Men are not to be servants of men but servants of God, servants of the ideal. "They are my servants," saith the Eternal, "and not the servants of servants."

With these fundamental concepts of religion and humanity living in the consciousness of the exiled people the ancient land and the visible temple gradually lost their literal aspect and became symbolic. Jerusalem and the temple ceased to be realities and were no longer thought of as substantial, material places but became symbols of the hope that never died, the hope that Israel would be permitted again to perform its religious duties in its ancient sanctuary and that, as expressed in another passage from the liturgy, "Our eyes may behold thy return unto Zion in compassion. Blessed art thou, oh Eternal, who restoreth his divine glory unto Zion." The idea of the restoration to Palestine, originally no doubt political, became in time purely religious. The restoration of Israel to Palestine was merely the earthly symbol of the restoration of the Shekhinah, the divine glory, to its ancient temple. So completely non-political was this conception, that the redemption and return were not conceived of except as at the "end of days" when the Messiah would come. Modern Zionism brings this millennial dream into the foreground of the present by seeking a home in Palestine for those Jewish people who are treated as aliens in different parts of the world. It proposes to assist them in establishing themselves in a land where they may live free not only from actual oppression, but in an environment and an atmosphere which shall be free from the subtle hostility which prevents the free exercise and development of those characteristics which are peculiar to the

race or to the religion of the Jew. Zionism is not a charity scheme to help the afflicted, but a plan to promote social justice by giving an opportunity to those who can and will make for themselves a place in the world where they may be fully and completely themselves. Themselves, not as individuals, for that they may be anywhere, but themselves, as a group, as a people, as a nation, having special characteristics and full and free opportunity to develop them.

Having thus far considered the genesis of the idea and the several elements that furnished its driving power, let us next consider the form taken by this idea during the nineteenth century in its effort to realize itself. Bearing in mind the fact that up to the second half of the nineteenth century practically nothing was done toward the re-settlement of the Jews in Palestine, we find that during the last fifty years three factors contributed most strongly to give form and plan to the ideas which, as we have seen, lived perpetually in the Jewish people. First, the plans of benevolent theorists; second, the work of practical idealists; and, third, the propaganda of the Zionists. The first includes the plans of politicians, social philosophers and religious enthusiasts who prepared Utopian schemes of restoration and even wrote the outlines of the constitution, government and economic policy of the restored state. The second includes the people who with much sacrifice of life, effort and means attempted by actual settlement in Palestine to establish proof of the practicability of the restoration. The third involves consideration of the history of the great modern movement, Zionism, which combining the theoretical idealism of the first with the practical idealism of the second, added a third element, namely, the insistence on the right of the re-settlement to develop into a free, independent and autonomous commonwealth. Napoleon conceived a plan of re-establishing a Jewish state as part of his great political scheme to control the entire Mediterranean basin. Had his campaign in the east been attended with success, a Jewish state might have arisen under the protection of the French flag. This solution of the problem at once suggests

a great danger. If a Jewish state is to be established through the agency of any one great power, its life would depend upon the ability of its creator to protect it. Instead of the realization of a millennial dream, it might prove nothing more than a pitiable anti-climax to the drama of Israel in exile. Beside political dreamers of the type of Napoleon, there were benevolent theorists, both Jewish and Christian, who planned on paper the reconstructed state. Philadelphia contributed its thought through the writings of Warder Cresson, who, as a fellow-citizen of ours, may be entitled to more than passing mention. He was a member of a well-known family of this city and was born here at the end of the eighteenth century. He was past forty years of age when, under the influence of the Rev. Isaac Leeser, then minister of the Mikve Israel Congregation, which now worships at Broad and York streets, he became interested in Judaism. In 1844, he was appointed first United States Consul to Jerusalem, and after four years' residence in Jerusalem he became a convert to Judaism. He worked and wrote in the interest of agricultural settlement in Palestine and, although his religious thoughts were mystical and obscure, his views on agricultural problems and possibilities were those of a practical observer.

While theorists were writing their Utopias, another group of people, who may be denominated practical idealists, were laying the foundation for a real settlement in Palestine by actually going there to live in the land. No reliable statistics are available, but according to the best information, there were not more than three thousand Jews in Palestine at the beginning of the nineteenth century and practically all of them were living in the four so-called Holy Cities, Jerusalem, Hebron, Tiberias and Safed. They were descendants of the Jews who had dwelt in the east since time immemorial, and of those who had found settlement there after their exile from Spain and Portugal at the end of the fifteenth century. During the middle of the nineteenth century they were joined by pious mystics from Poland and Russia, who settled chiefly in the northern cities of Safed and Tiberias, sacred to the mem-

ory of the Kabbalists and miracle workers of an earlier age. This group of immigrants cannot be said to have had much influence on the problem of resettlement on the land, for they all sought residence in the four cities and lived very largely on the charitable gifts which flowed into Palestine from their brethren in faith throughout the world.

They formed what was known as the old settlement, and its character was urban and not rural. The new settlement, at first exclusively rural in character, may be said to have been begun after the anti-Jewish laws of 1882 were promulgated by the Czar Alexander III. It is true that there were some efforts at agricultural settlement during the seventies but they were all abortive. Until the dawn of the twentieth century, the rural settlement in Palestine was a succession of pitiful failures and it is only within the last fifteen years that under wise direction, by the use of modern methods, theories and implements, and with the experience gained by numerous experimental failures, the agricultural settlements in Palestine began to prosper and show possibilities of permanence and improvement.

It is, of course, impossible within the limits of this address to go into details of the actual experience of the settlers during all this time, or to dwell upon the various technical factors which promoted the success of the colonial experiment from an agricultural as well as from an economic point of view. Suffice it to say that at the outbreak of the war, there were forty-six Jewish agricultural colonies established in Palestine, twenty of them in Judæa, seven in Samaria, sixteen in Galilee and three on the east side of the Jordan. They were largely assisted by the Jewish Colonization Association, which succeeded to the interests of Baron Edmond de Rothschild, who may be said to have been the patron saint of the Palestinian colonies. Through this association wise business methods and economies and a careful agricultural and horticultural exploitation of the land was commenced. The Anglo-Palestine bank was established, co-operative associations introduced, the education of farmers commenced, educational

institutions established, workingmen's houses erected, land development companies organized, forests of eucalyptus trees and olive trees planted, a farm school and an agricultural experiment station founded, and in the cities, particularly in Jerusalem and Jaffa, industrial enterprises and manual and art training schools established. In 1911, according to the statistics of the Anglo-Palestine Bank, the value of imports amounted to $5,820,000, and the value of exports to $3,840,000. The articles raised and exported were fruits, principally oranges, grapes, raisins and wines, livestock and hides, oil and soap, almonds, lupines, millet and barley, sesame seed, wool, cattle-fodder and beans. As the climate of Palestine is substantially the same as that of California and as it varies from the extreme heat of the lowlands to the very temperate climate of the hills. Experts agree that agricultural products ranging from the more hardy grains and fruits of the temperate regions to the sub-tropical products may be successfully produced there. At the outbreak of the war, there were between ten and fifteen thousand Jews living in the agricultural settlements and about eighty-five thousand in the cities, about seventy thousand of whom were living in the four holy cities already named, the balance scattered in Jaffa and seven other towns. It is the small but well-established group in the agricultural settlements that formed the real backbone for future development in Palestine.

Having followed the development of the idea of resettlement as it presented itself to the theorists and as it was actually worked out by the small but courageous group of actual settlers on the land, we have now to consider the third form in which the idea has taken shape. It is one which combines the theoretical plans of the early state builders and the practical experience of the colonists and it has added to these a third element, namely, a definite demand for international recognition of Palestine as specifically a homeland for the Jewish people, and this movement has come to be known as Zionism. Its story may be briefly told.

During the early struggles of the pioneers in Palestine, they

were given comfort and assistance by organizations, chief among which was the Hobebé Zion (Lovers of Zion), and many men of great distinction and nobility of character devoted themselves to the furtherance of that movement which was being so courageously, though inefficiently, carried on by the pioneer Jewish colonists. The modern Zionist movement is the most recent and thus far has proven to be the most efficient of these movements for the organization of the sentiment and the practical working out of the plan necessary to promote its success. It cannot, of course, be said that Zionism is an independent movement, for, like all things, it is born of those that precede it. It came into being in the city of Paris in the person of one who became its great leader and who had the practical genius, the commanding personality, the nobility of sentiment and the political sagacity that enabled him, not only to unite the factions and groups that divided Jews on questions of theory and policy, not only to overcome the opposition of many of those who saw in Zionism a menace and not a hope, but also to gain the attention of the unofficial non-Jewish world and to a most remarkable degree that of the responsible heads of the governments of the world. Theodore Herzl, a brilliant newspaper writer, while in Paris, in 1895, to report the Dreyfus trial, was converted from life-long indifference to Jewish matters and became the greatest leader of the Jews in modern times. He saw in Captain Dreyfus, the defendant in that trial, a symbol of the Jewish people who had throughout all the Christian centuries been the victims of political and religious persecution and of social injustice and outrage and by a swift generalization from this phenomenon he was converted to the idea that the solution of the Jewish problem was the establishment of a Jewish state. The idea in Herzl's mind was born of a reaction against Jew-hatred and persecution, more particularly against that form of it which has come to be known as anti-Semitism. Herzl was no mystic. He had lost touch with the synagogal aspect of the Jewish dream of a restoration and to him the problem presented itself as a race problem which could be solved only

by national independence and autonomy. Among those Jews who lived under the yoke, notably the Jews of Russia and Roumania and of Oriental countries and also among those who, like the Jews of Germany and Austria, though enjoying equal legal rights were subject to a discrimination which affected them economically and socially, the new doctrine presented by Herzl found ready acceptance. And in the free lands of the world, in England and the United States, in Italy, in Holland, there were many Jews who sympathized with this movement, first, because it seemed to them to offer a solution of the problem of those individuals who were living in lands of oppression and who desired to establish themselves in a new home which would offer them peace and freedom; second, because it appealed to their idealism as a wonderful experiment in sociology; third, because it satisfied their deep-rooted sense of justice. Within a very short time after Dr. Herzl first appeared on the scene, a Congress of Jews met at Basel, in Switzerland, under his presidency, in August, 1917, and for the first time laid before the world a public petition of rights for which it asked international sanction. The great basic declaration made by this congress, which has ever since been the foundation stone of Zionism, was that the object of Zionism is the creation for the Jewish people of a home in Palestine secured by public international law. This was the expression of a principle which in itself was bound to react beneficially upon all the world. A demand was made for recognition, based not upon power nor upon conquest, but upon that noble assumption of the French philosophers of the eighteenth century, the doctrine of the rights of man. There was no attempt made to base the claim upon any legal right or title to the Palestinian soil. The Jews had lost Palestine nearly two thousand years ago and it had since been occupied by other peoples; whatever legal title they may have had to it had been lost by lapse of time and the prescriptive rights of the present occupants could not be called into question. There were those, of course, who, harking back to the Bible, still maintained that the Jews had a right to lay claim

to Palestine, because it was originally given to them by God. But no one seriously offered this as a reason for the demand made upon the powers of the world. Zionism from the beginning recognized and respected the rights of Christians and Mohammedans who were already living in Palestine or who might thereafter enter it. All land taken by and for the Jews would have to be lawfully acquired by honorable purchase from its present owners. And all men, Jews, Christians and Moslems might become members of the state. If, as was hoped, the Jews would ultimately constitute the great majority of the population in Palestine, they would be normally the controlling influence in the new state, but there was no reason why, following the system existing in all other states in the world, non-Jews should not be members of the Jewish state if they so pleased, for membership in the Jewish state was something different from adherence to the Jewish faith. A Jew or Musselman may become a citizen of any of the states of the world whose population is predominantly Christian and whose government is more or less subject to Christian influence without requiring him to yield in any respect his right to worship God according to the dictates of his conscience. So, in the Jewish state the Christian and the Moslem might become a citizen without in any way yielding his Christianity or Islam, and the fact that the majority of the people in the Jewish state happened to be adherents of the Jewish religion would be irrelevant in considering their political rights.

How was the Zionist program received by the world, and by the Jews themselves? It must not be supposed that this movement has enjoyed the unanimous approval of the Jewish people throughout the world. On the contrary, from the very beginning, even before the first congress a very vigorous opposition sprung up among the Jews living in Occidental countries protesting against this attempt to re-orientalize and segregate the Jews and thus deprive them of the hard-won fruits of their centuries of suffering, endured in the hope that the world would ultimately acknowledge the Jew as a man and

a brother notwithstanding his religious non-conformity with the dominant standard. During the nineteenth century, the religious intolerance which had apparently been an essential characteristic of the Christian life, gradually made way for a more humane conception of the relation of man to man. The Jew took his place as a citizen and participated publicly, freely, loyally and efficiently in the life of the community. To many Jews, the Zionist movement seemed a surrender of all this. They laid stress upon its implication that the Jews had national affiliations other than those that bound them to their fellow-citizens; that the anti-Semites would thereby be furnished with weapons with which to continue their attacks on the loyalty of the Jews to the countries of their residence; that Judaism is a religion and that political aspirations of a Jewish people are detrimental to the real purpose of Israel in the world which is to maintain religious and ethical ideas and the belief in one God through which alone humanity can be united into a real brotherhood. The Zionists reply was substantially to this effect, that although political allegiance was indivisible and no man could be the citizen of more than one state, the bonds of fellowship created by family ties, by common religious traditions, by similar ideals of social justice, by a long history of common suffering, by united opposition to the pressure of foreign religious dogma, were in very truth existing bonds of union which no amount of protestation could banish or dissolve. That if the Jewish state is established, Jews everywhere have the choice of staying or going, those who stay will thereby demonstrate in a manner, now impossible, if such demonstration is needed, that they do not wish to be counted as citizens of the Judæan state, however they may sympathize with its creation and development, and that they are and will remain citizens of the land of their birth or adoption.

The Zionists further reply that the Judæan state can at best be but a small state containing in its most properous and populous condition not more than three million people, and as there are now about fourteen million Jews in the world,

it would mean that a nucleus of less than one-fourth of all the Jews of the world would be there established to work out and live out a new life, the life of a Jewish people in a Jewish land. A people would be there gathered by choice and not by compulsion to live its national life and show what there is in the national body and soul that is peculiar to this people and mayhap of value to the world. For a Jew living in any other country in the world lives as an individual, as a citizen of his state, and he cannot, no matter how great his individual contribution and worth may be, give anything to the world as a Jew, for he is not a member of a Jewish nation. That is possible only in the land of Israel, among a Jewish people, who, through living and working together, may exhibit the Jewish psychology and demonstrate whether there is anything in it that is worth while. And, finally, the Zionists say that, although they fear to tread the pathway of prophecy, they may venture to predict that a people that has given to the world the ideals of the unity of God, the brotherhood of all mankind, the principles of social justice in the Mosaic law, may again, given the opportunity, contribute as a people to the spiritual wealth of the human race.

The Zionist movement, on the whole, met with a favorable reception throughout the world. In view of the fact that the establishment of a state in Palestine would necessarily create a new member of the international brotherhood of nations, the problem at once presented itself as one with political implications that required careful consideration by the responsible heads of the governments of the world. England, from the beginning, was favorable to the movement. This may have been due partly to tradition, partly to the essential liberality of principle that has animated the English ruling classes, and partly because the scheme fell in harmoniously with the plans of English statecraft.

It is not only because of its sheer dramatic interest, but, also, because of its fundamental importance as a factor in world politics that the establishment of a Jewish state deserves consideration. "The stone which the builders rejected is be-

Like Turkey, it contains many different national and racial groups. If the principle of autonomy were to be applied to such groups in Austria, the empire as we know it would cease to exist, for it could only be continued through the consent of the states that compose it. And, in fact, we find that Zionism has met with a cold reception by the Austrian imperial authorities. This may have been due partly to the reason assigned and partly to the fact that Austria has been so closely allied to Germany that the international policy of the latter would be the controlling factor in determining her own policy, and Germany has always had an eye to the protection of Turkish interests insofar as such protection harmonized with Germany's plans of expansion. Perhaps, therefore, Austria's opposition to Zionism is due as much to Germany's influence as it is to the inherent clash of principle between imperialism and Zionism.

Germany has been frankly unfavorable to Zionism. The German emperor expressed himself in favor of the promotion of agricultural life in Palestine provided that it resulted in benefit to the Turkish Empire and did not in any way interfere with the sovereignty of his friend and ally, the Sultan. Official Germany saw nothing in the Zionist plan which would be helpful to her interests and, therefore, was opposed to it. In encouraging the plan of the agricultural development of Palestine by the Jews, Germany was really not providing for the Jews but for Turkey, and so long as Turkish rule over Palestine was maintained, Palestine would remain part of the great buffer state by which the British menace from Egypt could be warded off and the British plan of overland communication between Egypt and India be thwarted. As long as the Jews were established as subjects of the Turk, they would be under the control of Germany and could be used for the purpose of promoting Germany's interests in the Orient.

After the beginning of the year 1916, the Turkish government came to the conclusion that the Zionists might be made useful to Turkey and the military governor of Palestine showed this by offering assistance to the Jewish colonists at

Rishon le-Zion. Shortly thereafter, Talaat Bey, speaking for the government, stated that "as far as Palestine was concerned, the Turkish government always maintained a favorable attitude toward the Jews who have been immigrating there for the last century. It ever looked with favor on the enterprises which tended toward improving the industrial and economic condition of the land. The government, however, looks with disfavor upon Zionists who have political ambitions for Palestine and it regards them enemies to the government. All parts of the empire, with the exception of Palestine, are open to Jews who desire to become Ottoman subjects."

This statement was shortly followed by a statement of Baron von dem Bussche, the German Under Secretary of State for Foreign Affairs, who said, "as regards the aspiration in Palestine of Jewry, especially Zionism, we welcome the recent statement of the Grand Vizier Talaat Bey expressing the Turkish government's intention in accordance with the friendly attitude they have always adopted toward the Jews to promote flourishing settlement within the limits of the capacity of the country, local self-government corresponding to the country's laws and the free development of their civilization," In view of Talaat Bey's outspoken opposition to political Zionism, the statement of the German Under Secretary of State for Foreign Affairs means nothing more than that Germany would look with favor upon the continued improvement of the Turkish Empire by the Jews who would enter it for the purpose of promoting its agricultural and industrial welfare.

Imperial Russia was in principle opposed to Zionism. But, as the creation of the Zionist state would result in its being carved out of Turkish possessions, the Russian government was attracted to the scheme because it saw in it the possibility of making trouble for Turkey. On the other hand, when the Russian government feared that control of the Zionist organization in Russia was falling into the hands of Socialists it changed its attitude through fear of the immediate danger which might result from the recognition of any move-

ment so thoroughly incompatible with the doctrine of an imperial autocracy. Zionism as a principle can be accepted only by those who believe that every people has the right to determine its own form of government and its own form of economic policy, and to develop its own corporate individuality insofar as it does no harm to other peoples having similar rights. Individual freedom, tempered by respect for the rights of others, must remain the principle of all proper human association, both individual and corporate, and this principle is capable of its proper application and expansion only among those peoples whose governments are the servants and not the masters of the governed.

The declaration of the British government above quoted in no way intimates the policy of the British government as to the future government of Palestine. The fact that it views with favor "the establishment in Palestine of a national home for the Jews" carries with it no suggestion as to whether this plan is to be carried out under British or international direction. On the other hand, a declaration recently made by Monsieur Pichon, the French Foreign Minister, is more specific. He said "we consider the capture of Jerusalem not a French victory or a British victory, but a victory for the civilized world and a deliverance for the populations of Palestine where there will be instituted an international régime of justice and liberty." That it is the French policy to favor the internationalization of Palestine seems clear, especially if this statement be taken together with one recently made by Monsieur Jusserand, French Ambassador to the United States. Monsieur Jusserand said: "It is only natural that the French Republic will safeguard the interests of the Jewish people and their ancestral claims on Palestine as well as the life and independence of all the little nations. It will also protect the rights of other nations and creeds to the holy places in Palestine." Thus the British declaration may be properly interpreted in the light of the French, and it must be assumed that neither the one nor the other was made until after careful consultation and agreement.

The political character of the invasion of Palestine by Allied troops requires some further consideration. At the time of the British advance and the taking of Jerusalem, the American press very largely reflected the sentiment that this was a British and a Christian victory. As to the latter characteristic, it should not be forgotten that the forces operating in Palestine contained very many more Mohammedans and Hindus and Jews than Christians, and the campaign, therefore, in no way represents the victory of the Cross over the Crescent. That it is not a British victory and perhaps not intended to be so by either Great Britain or its allies is suggested by the statements of the French statesman already quoted and further made clear by Baron Sonnino, the Prime Minister of Italy, in a recent speech made by him to the Italian Parliament, in which he said, "Against Turkey England has recently undertaken a new vigorous military action in Palestine in which the bravery of the British army has already been demonstrated. The Italian flag is represented in that expedition—a fact which responds to a high international and moral interest. Palestine must be freed from the Turkish yoke. Once so freed, it will be neutralized and internationalized and declared an independent state."

At the time when Baron Sonnino made this statement, a dispatch from the Italian Foreign Office said that Italian troops had been sent to Egypt to join in the Palestinian advance in pursuance of the decision of the Allies, "in concert with America," to neutralize and internationalize Palestine.

For some time no official declaration on the subject was made by our government, but, on January 8, in his address to Congress, President Wilson laid down his peace program, the twelfth paragraph of which was as follows: "The Turkish portion of the present Ottoman Empire should be assured a secure sovereignty, but the other nationalities which are now under Turkish rule should be assured an undoubted security of life and an absolutely unmolested opportunity of autonomous development, and the Dardanelles should be permantly

open as a free passage to the ships and commerce of all nations."

In view of all that had gone before, in view of the official statements of responsible ministers of Great Britain, France and Italy, it cannot be doubted that our President had in mind, among others, the Jews of Palestine and their claim to a homeland secured by international law.

Only three days before this statement of President Wilson, Mr. Lloyd George, in an address to the delegates of English trade unions, said, "while we do not challenge the maintenance of the Turkish Empire in the homeland of the Turkish race . . . Arabia, Armenia, Mesopotamia, Syria and Palestine are in our judgment entitled to recognition of their separate national conditions. What the exact form of that resolution should be need not be here discussed beyond stating that it will be impossible to restore to their former sovereignty the territories to which I have referred." Read in the light of this statement of Mr. Lloyd George, President Wilson's declaration is unmistakable.

Here then we have the solution presented by the statesmanship of at least one great group of powers. A neutral state, internationalized, shall arise in place of the misgoverned and wretched pashalic of Turkey in Palestine. It will be one of several such states that are to be erected in the domains of Turkey and Asia. Will this plan meet with the approval of the other group of powers? Will the peace conference be dominated by the statesmanship of the conservative imperialistic type or by the statesmanship of the newer democratic type? On the answer to this question depends the fate of Palestine.

In our review of the rise and development of the modern movement for the establishment of a Jewish state in Palestine we have seen five important contributing causes. First, the ancient religious hope. Second, the endless centuries of persecution which intensified the religious aspect of this hope and at the same time kept before the mind of the Jew the tantalizing possibility of life in a land in which there was no

persecution. Third, the development of nineteenth century nationalism, which renewed the religious hope and explained the desire of the Jew for restoration in terms of the inherent right of all national groups to national existence on a national soil. Fourth, the rise and spread of the modern anti-Semitic movement. And fifth, world politics, which has again given the land at the eastern shore of the Mediterranean a significance that it had lost and which has brought the establishment of a Jewish state for a Jewish people through international guarantees in line with modern political thought and the hoped-for statesmanlike solution of the difficulties that underlie the present disastrous condition of the world's population.

We have confined ourselves largely to a review of the established facts. The field of prophecy is an inviting one, but it has its dangers. How will the Jewish state be established? What will be the form of its government? What will be its economic policy? What will be its relation to the powers? What form will its institutions take? How will the Jewish spirit manifest itself when allowed to develop in a perfectly congenial free atmosphere? How will ancient Jewish institutions now sacredly preserved by orthodox Jewry throughout the world be affected when they are retransplanted into Palestine and must maintain themselves not solely because of their sacred ancient association, but also because of their inherent merit and value? What will be the peculiar contribution that this new-old civilization will make to the stock of the world's thought and deed? Will it be in the field of pure thought, of social service, of religion, of science, or art, or literature, or commerce, or will it strike out into new paths into which the human genius has as yet not ventured? How will the establishment of the Jewish state affect the other states of the world? And what will be the effect of the influence of other states upon the Jewish state? What will be the effect upon the millions of Jews throughout the world who will not return and will not want to return to Palestine? Will they continue to maintain their racial and religious separateness

and will the non-Jews continue to maintain their racial and religious antagonism? These and many other questions naturally suggest themselves. The answer to them lies in the lap of the gods. I do not venture to seek it or even to suggest it. What will happen in the long run, no man can foretell, but many Jews believe that it is the great destiny of the Jewish people and of the Jewish state in Palestine to be the harbinger of peace to the world. That as from Sinai, smallest of mountains, the law was given to Moses, so from Israel, smallest among the nations, peace shall be given to the world. "And it shall come to pass in the end of days, that the mountain of the Lord's house shall be established as the top of the mountains, and shall be exalted above the hills; and all nations shall flow unto it. And many people shall go and say, 'Come ye, and let us go up to the mountain of the Lord, to the house of the God of Jacob; and he will teach us of his ways, and we will walk in his paths; for out of Zion shall go forth the law, and the word of the Lord from Jerusalem. And he shall judge between the nations, and shall decide for many peoples; and they shall beat their swords into plowshares, and their spears into pruning-hooks; nation shall not lift up sword against nation, neither shall they learn war any more.' "

Is it thus that the cry of the world for peace shall be answered? Shall the world's palace of peace wherein the world's court of arbitration shall sit to do justice between the nations, rise on Mount Zion? Who knows?

MARTIAL, HIS FOOLS AND ROGUES

By Walton B. McDaniel

Professor of Latin

Marcus Valerius Martialis, or Martial, as we commonly call him, was born between 38 and 41 A. D., and died between 102 and 104 A. D., somewhat above the age of sixty.

Of the many critics who have declared him the world's greatest epigrammatist none can prove it satisfactorily to the scholar by any poetical translations intended for readers ignorant of Latin; for epigram is a form of literature that is untranslatable. At the very outset, therefore, of this lecture I announce my total abstinence from any versifying. I shall do the poet enough harm, no doubt, without adding myself to the long list of failures, the traducers who thought that they were translating. Fortunately for this hour we are concerned with him not as a literary artist, but as a man and as a portrayer of men.

Bilbilis, in northeastern Spain, was the poet's birthplace, a lofty town nestling in a fold of the little river Salo. In the neighborhood were gold mines, in which he apparently never owned any shares, and stock-farms, famous for horses; but the community's chief wealth came, we may suppose, from the manufacture of steel, in the hardening of which the cold waters of the Salo were of service. Though a Spaniard by birth and of Spanish stock, Martial became so thoroughly a Roman that philological ferrets have no real success in hunting out Spanishisms in his writings. He might well have been born in the Subura of Rome itself.

The only information that he vouchsafes posterity about his parents is that they were fools to give him a literary training, but we should not take him too seriously in this statement nor in any other that he makes in the nearly ten thousand lines that he has left us. He never hesitates to ridicule his own foibles, to speak with levity about what deeply concerned him,

to make a jest of his misfortunes. Only a man of humor has any right to read him at all. We should like to know where he received from grammatical and rhetorical teachers the really adequate education which he ironically disparages. To judge by his attainments he must have studied his Greek hard at some time or other, but please do not assume from this that he was ever a goody-goody pupil. He cannot give even the birthplace of Cicero correctly and he makes other tell-tale mistakes. Moreover, he dwells so painfully upon the harsh discipline of the Roman schools and speaks so feelingly of ferules as being objects of hatred to school-boys, though dear to their masters, that we cannot but suspect that he had himself learned by personal experience that the hollow cane in which Prometheus stole fire from heaven still retained some heat. Although his allusions to pedagogues have the tone of a lifelong grievance, they at any rate gave him an education that fitted him for a career at the bar. Whether he ever actually practiced law is a question that I shall discreetly leave unsettled. The evidence is inconclusive and a solution unlikely to enhance anybody's happiness, least of all my own.

About the year 64 A. D. Martial moved from Spain to Rome, making his journey, I believe, largely by sea. There, it is safe to say, he would begin his career about as free from all family, social, financial and political entanglements, burdens and duties as a bachelor from the heart of Australia newly arrived in Philadelphia. The gap between Bilbilis and the capital of the Roman empire was as great as our imaginative powers can conceive. We must not, however, think of him as an ancient Ben Franklin, wandering through the streets with a loaf of bread under his arm. The doors of some of Rome's finest mansions stood open to receive him. The Senecas, his fellow-countrymen, were still in some favor with the Emperor Nero, and through them he would have the entrée to the homes of other opulent noblemen like the Pisos. Just how their downfall and deaths affected him we can only guess. Scholars overtax their fancy in trying to determine how Martial occupied his time in this period down to 80 A. D., when

his first collected poems came out in Rome. Perhaps remittances from home kept the cobwebs out of his purse; perhaps he even crossed his natural instincts enough to earn an honest living in some steady job. No doubt the money lender Sextus, whom he calls his "old chum," would tide him over periods of unusual financial stringency, but prayer and poetry were probably already his main reliance. We find prayers, indeed, for pretty much everything that a patron could bestow, expressed in the form of literature, epigram, which is most serviceable to one who must write quickly, emphatically and repeatedly.

Martial is the master-mendicant of all time. Italy is to this day the happy hunting ground of beggars, but in ingenuity, humorous effrontery and dogged persistency our poet seems to us the lineal ancestor of them all and they mere degenerate imitators. The only difference is that he was a respectable member of the society of his age, which accepted the system of patron and client much as we submit to that of boss and heeler in our politics without any special affection for it. With Martial beggary was a fine art, a science, a profession, but also, we must never forget, one of his biggest jokes. He could not have been so poor as he sometimes professes. In the first place, his epigrams account for a number of slaves in his possession. He was at least nominally, if not financially, a full-fledged knight, nor can the fictitious fatherhood of three children—*ius trium liberorum*—which he received by imperial favor, be regarded as anything but an asset. By the time of his death he had owned in all three properties, including a suburban farm at Nomentum in the Sabine country. This, to be sure, bore no bumper crops and in its equipment was rather primitive. The cottage let in the winter storms until its occupant prevailed upon the wealthy Stella to roof it with tiles. The beneficiary would have had his own interpretation of the saying: "One good turn deserves another;" for no sooner had he received the covering for his house than he asked the donor for another for his head—in modern slang, another "tile."

Martial's last property came to him as a gift from a certain Marcella when he returned to Spain to spend there the closing years of his life, a token perhaps of a purely platonic affection, although some theorists have repaid the good woman's charity by inflicting him upon her as her husband. One Frenchman, indeed, would make her, Martial's third matrimonial venture, although it is really more than doubtful whether he ever married at all. It is safer to assume that Marcella was merely an admirer of his epigrams; for he lays stress upon her possession of good taste, with true Spanish gallantry proclaiming that she made Bilbilis Rome for him and that her voice was sweet enough for the palace halls of the Palatine. No wonder that back in Bilbilis he was quite happy for a while. He could sleep all the morning, if he wished, could hunt and fish and eat oysters to his fill. There a little money went a long way. The country itself fed him and also supplied wood in abundance for a blazing hearth without any long-distance fetching, which he regarded with disfavor. Instead of needing four dress suits in a single summer, one would last him for four years, and, in fact, was not really necessary at all. In Bilbilis there was a better chance to dodge clients and less need to dodge creditors. His old-time friends gave him warm welcome. One presented him with a two-seated carriage, taking thought, perhaps, for Marcella in his choice of that special size. But presently the happy-go-lucky rustication for which he had yearned palled. He began to miss the distinguished society in which he had lived so long at Rome. Lacking the inspiration he once received so bountifully from those he met in the theaters, baths, libraries, and at the shows and dinner parties of the world's metropolis, he could do no literary work at all, he tells us, for three whole years.

Since the expenses of a trip from Rome to Bilbilis could hardly be met from a poet's pocket-book, Martial had shown commendable foresight in writing certain verses in honor of Pliny the Younger, whose reputation as a giver must have been wide among the professional recipients of his native land. Pliny had some confidence that our bard would be

immortal, or, to speak more accurately, that his works would be, but he was not willing to take any chances and so he transcribes Martial's laudatory verses in a letter in order to ensure them their double chance of surviving, and at the same time to allow posterity to know that his charity had granted the writer a reward of gratitude. It is this same epistle that informs us that Martial had now taken the still longer journey to a faraway world where the only passage-money required was the pittance that Charon demanded for ferrying over the Styx, a bronze penny that was put between the teeth of the dead. Had he not been dead, our poet would probably have borrowed it.

From this sketch of the essential facts in Martial's career we may now proceed to some special discussions. Since in the many biographies and literary critiques which are available in the modern languages, the question of his moral qualities has been much to the fore, we may properly make that our first topic. It is disagreeable and we might as well get it off our minds as soon and as decently as possible. Anybody who has imagined Martial to have been some ancient Sir Galahad is privileged at this point to retire.

In the case of a living author an appraisement of his personal character on the basis of what he publishes might unduly sanctify him, or, on the other hand, justify a suit for libel. No critic nowadays would venture to judge by such an unreliable criterion as that. He knows that an anemic, squeamish weakling, a very pattern of personal impeccability, can be responsible for a novel of blood and passion or for a play replete with naughtiness, while the red-blooded voluptuary sometimes issues sweet versicles of a wholly innocuous character. This was probably much less true, however, in the first centuries of our era when the production of fiction was in its infancy, and we surely do Petronius and Apuleius little wrong in relating somewhat closely the ethics of their stories to the ethics of their lives. They were both bad.

Martial has been censured chiefly for the impurity of his thought and diction. Here again, if we are to seek the real

man, we must contrast ancient and modern conditions. At the present time, writing like speech seems to serve in some cases as a moral safety-valve. A well-known writer (Zangwill) has declared: "To have written erotic verse is almost a certificate of respectability; the energy that might have been expended in action has run to rhyme." The sensualist who achieves an almost prudish propriety in his conversation has his counterpart in the man of strict conduct who yet allows his tongue an occasional impudicity. But Martial's lapses are not exactly occasional, and there are other reasons also why we cannot accept even his solemn word for it that in spite of the wantonness of various verses, he was himself a man of probity. In the first place, this assertion appears in one of his earliest productions and he had many years thereafter in which to develop a deportment that should correspond more closely to his publications, if it had really failed to accord with them already. Moreover, it seems to have been a literary vogue for poets who wrote outrageously to lay claim to personal purity, even as it was a proper and somewhat humorous pose with some writers to proclaim their cowardice in war. According to what was poetry in perhaps more senses than one, Archilochus threw away his shield in battle and so Horace had to discard his at Philippi. Catullus and Ovid are among those who would persuade us of a disparity between their published language and their real character. Yet we should venture to liken neither of these poets to dove or lily. As for Martial, even when we make the fullest allowance for the fact that such of his epigrams as are in the first person do not necessarily reveal beliefs and experiences of his own and for the still more important fact that among the Greeks and Romans self-revelation was excessively thorough and quite unashamed, he yet convinces us that he seldom suffered from ethical misgivings and balked at no reasonably safe debauchery. Some vice he indulged in freely and without much ethical excuse. "Without excuse," I say, because he reveals repeatedly in his own writings that he had sufficient knowledge of what was right and what was wrong, pictures prettily the ideal woman,

and praises virtue sincerely and intelligently. Some palliate his transgressions on the score that he had chosen a literary genre that traditionally required the treatment that he gave it. But why choose it, if it was inconsonant with his personal principles and with his private conduct? No, the very best that the moral whitewasher can do to make our writer presentable is to say that the society in which he lived was sterile of saints and that he was no worse than most of the sinners, a plea which we often have to make for great writers of the past in every tongue. Even Pliny the Younger, a very admirable character for any age, condescended to compose verses which in his best moments he was morally ashamed of and in his worst rather proud of as literature.

"Well, why read Martial then?" an uninformed person may inquire of a classicist who admits that he has spent thousands of hours in minute study of his works. In the first place, not to urge the dominant reasons that the poet's information about antiquity is indispensable, that he ranks foremost in his particular field of epigram and that consequently he has been the model for numberless successors, it must in fairness be noted that less than one-fifth of his poems contain anything offensive at all, and many of these would disclose nothing evil to an unsophisticated reader, while a larger part contain only a line or two, or, it may be, only a single word that contemporary delicacy would disallow. These a teacher readily avoids. Many, too, of Martial's expressions have no more than a Chaucerian vulgarity and coarseness. You see, the ladies of Rome's fashionable circles spoke more as Queen Elizabeth did than as Queen Victoria, while the men vied with one another in developing a vocabulary of lubricity as an instrument of what passed for wit. The point to emphasize is really this, that Martial, quite unintentionally, I admit, makes vice itself utterly repulsive. His jests and innuendos may amuse in the same ephemeral way that those of our farce comedies do a certain grade of male auditor and unmaidenly matrons, but there is very little anywhere in his writings that could seduce modern innocence. I think, indeed, that a study of Martial and his

times might even serve as a corrective for some young people who have become morally unbalanced by certain reading and playgoing against which home, school and state but poorly protect them. The life of Rome is a lesson-book in the results that would follow if some of our untutored radicals had their way in the fields of religion, ethics and government. Surely, no course of reading in the classics will more deeply and dynamically demoralize the person who is uninformed of the past and untaught by the present than uncontrolled acquaintance with, for example, Bernard Shaw, Ellen Key, Tolstoi, and—shall I say?—Brieux. But these luminaries some fairly enlightened people call reformers and all just people assume them to be well-intentioned, while Martial hardly exhibits an intention of any sort other than his basic one of amusing or of celebrating his readers in the hope of material compensations. He is assuredly no reformer. He is not sufficiently indignant at the great outrages of his age to deserve the title, and he had too little consciousness of human solidarity to worry over the real evils of society except in so far as they affected him personally. If he welcomes some great public utility, such as the amphitheater and bath that replaced the Golden House which Nero had constructed without regard for the rights of numberless citizens, it is more as an opportunity to flatter the emperor with a poem of praise than because these new edifices benefited the populace.

Martial deals with life as an unending comedy, however tragic some of his own days may have been to him. His temperament was so easy going, his indifference so difficult to sting into any moral interest of the deeper sort that we can see in him only the fun-loving spectator who gazes with clear-vision and critical aloofness upon the activities of God's pitiful homunculi. He and his reader laugh together, but they laugh in no spirit of cynicism.

Although it is mostly the small matters that engage Martial, the foibles, vanities, asininities, hypocrisies and personal frailties of his contemporaries, he yet is as much a master in satirizing them as his friend Juvenal is in his assaults on the graver

errors of mankind. Moreover, much of Martial's censure is as applicable to us of today as it was to his fellow-countrymen, as we shall presently perceive.

In another particular the epigrams deserve study. In addition to those that are of a satirical nature, he composed some truly lovely verses, especially epitaphs, birthday poems and certain tributes of friendship which any man would joy to receive today. Some of his most felicitous pieces are the epitaphs, which commemorate not merely friends and public characters, but also slaves and ex-slaves, children and pets. Of the last no Roman has written more sympathetically, and the variety of animals which he mentions is astonishing, until you remember that in much of Italy now it is a poor home that has not at least a sparrow caged above the door, while other more or less dumb creatures enjoy an intimacy with you second only to that of the flea.

The memorial he composed for the little maiden Erotion, who for all her loveliness and playfulness had to die, will serve as a sample of the tender felicity with which he could write of even an humble slave. This is the translation of it that one of my college mates once made:

> Unto you, Father Fronto and Mother Flacilla
> I give my Erotion, my darling, my pet.
> Let no goblins affright her—the poor little maiden—
> Nor cavern-mouthed dog over Tartarus set.
> She in safety had finished just six stormy winters,
> One day more for each had she tarried to see.
> Like a lamb let her play round her watchers familiar:
> With sweet lisping tongue let her prattle of me.
> Let the turf her soft form gently fold, and not heavy
> Be thou, Earth, on her who so lightly trod thee.

Besides this epitaph there is other pleasing evidence that the writer was in general a kind master to his servants and disapproved much of the wanton cruelty that he observed in the circles about him.

The aesthetic side of life meant much to him, if one may judge by his multitudinous references to painting, sculpture,

architecture and the smaller toreutic products. As for music we are not so sure. He observes that the best sort of dinner party is one at which no pipe player is present, but there are still refined persons who do not need a brass brand to whet their appetite or to strengthen their digestion, much less as a make-shift for amiable, intelligible conversation. Even the sometimes unrefined epigrammatist has a few refining suggestions for our cultivated age.

Furthermore, the worldly wisdom of our author is still valuable for those whose manners and customs have not wholly petrified. It reminds us of Horace's best offerings in his satires and epistles. He often puts it forth in sententious phrases which stick in the memory. *Ut ameris ama:* "to be loved, love;" *fortuna multis dat nimis, satis nulli:* "to many fortune gives too much, to none enough" are typical specimens. He had the powers of observation with which Henrik Ibsen is accredited and an ability to delineate the characteristics of the men and women he saw and saw through with convincing vividness. They were gathered from every quarter of the universe in the city which the poet in pride of patriotism salutes as "goddess of the world and of all its peoples, Rome, with nothing to match her, nothing second." If statistics were not a bore outside a school of commerce, I should give you mine to show how extraordinary this cosmopolitanism really was.

Martial is one of the great realists. He had, in fact, no patience with the *un*-realists in literature, the writers of tragedy and epic who cared more for Tereus and Thyestes, Daedalus and Polyphemus than for the living men and women who composed the Vanity Fair of Rome. In any verses that he composes Life must recognize herself, her true likeness. The best topic that man can write about is man. His statement *hominem pagina nostra sapit* is readily verified and seems to be an echo from that earlier student of human nature Terence, whose *homo sum: humani nil a me alienum puto* is now so well known that it almost quotes itself for our pedants.

But in spite of the breadth of Martial's intellectual interest

in humanity, he had too little heart interest to be termed a humanitarian. Nor even intellectually was he the sort of man to appeal to any and every reader of the present day. The same is true of his great successors and imitators, John Owen, Prior, Landor and others. Epigram is indeed the one branch of lyric poetry (for that is its proper classification) that is least likely to win any personal affection, any partisan attachment for its writer. In particular Martial's books should be taboo to all persons whose sense of humor has been atrophied by a lifetime of self esteem, or who are sensitive about their own little conventions and immutable dogmas. May I as a faithful suffragist myself take as one of my examples any "suffragette" or feminist who would be peeved by our poet's paradoxical assertion that to have equality in matrimony the wife must be subordinated to her husband. That sort of person should safeguard her sensibilities by reading nothing but catalogues and dictionaries. Moreover, such human angels as abhor personalities and themselves always refrain from them must let our author severely alone; for he is personal, wittily and scandalously personal. Much that he wrote reads like some ancient "Town Topics." On the other hand, anybody who can stand the give and take of tongue-free badinage, who finds a Gallic delight in raillery and repartee, will meet with much in the epigrams that is congenial. It seems certain, indeed, that many merely perpetuate the actual conversations in which he had played his part. That explains why he lost inspiration in the provincial rusticity of Spain. Even Marcella's urbanity could not save him and the poet that a woman cannot save for wit and poetry is beyond the help of even the nine Muses and the god Apollo.

Martial himself forbids us to take his epigrams too soberly. They belong to the tenth hour of the day, he says, that is towards the end of the afternoon, in the midst of the feast when the guests have become somewhat mellow with wine and are ready to listen to something lively and spicy. They should not be read after the first glass nor after the last, but while Bacchus holds full sway. Wine-suppers were an appropriate

occasion for their recitation and the Saturnalia or Roman Christmas, was their special season. So he bids his book go to Pliny at late lamp-light time, when Bacchus, the Looser from Care, is running riot, when the rose is queen, when locks are dripping with fragrant ointments. Then even such strait-laced Puritans as Cato, the very paragon of delicacy, may read his verses. Many of the more serious were, of course, composed for special events, as, for instance, for household celebrations, for the return of the emperor from a campaign, or to introduce or dedicate a volume of his works to a friend or patron.

While Martial recognized, of course, that epigrams must of necessity contain a modicum of Attic salt and some of the bitterness of gall, if they were to be appetizing to Roman readers, he vehemently disclaims any intention to wound. He anticipated the attitude that is expressed in Pope's lines:

> "Cursed be the verse, how well soe'er the flow,
> That tends to make one worthy man my foe,"

although it is by no means exemplified by Pope's own conduct. Martial's avowed purpose is to please and particularly to confer that gratifying publicity which nowadays may come through intimacy with the society editor of a newspaper or from discreet traffic with his hirelings. He roundly abuses poetasters who ventured to circulate under his name venomous and maleficent verses of their own, and himself commonly resorts to the devices of anonymity to avoid trouble. Under what is often a fanciful but significant name he will satirize a whole group of offenders. Thus the plagiarist Fidentinus is so-called to suggest that he lack Fides "good faith." Eulogus is the auctioneer as one who speaks well; Vetustilla a wizened up wisp of a woman, the personification of *vetustas* "old age." The writer who never manages to compose epigrams of his own, while criticizing those of Martial as too long, is Velox or Mr. Swift.

Although our author appears to have received no royalties from his publishers, he did expect a quid pro quo from persons

whom he praised, and he felt cheated when the recipient ignored the "puff" or "write-up" and failed to send him something that was tangible, and, if not usable, at least salable. Plagiarists greatly bothered him. To one of them he wittily observed: "When you recite the poems you stole from me, you do it so badly that you make them really your own."

Our poet's popularity was immense. He tells us so himself—often. His candor about it indeed recalls that of Cicero when he is engaged in singing the praises of Cicero. Even though certain literary bigots were showing an affected partiality for what was old, Martial says, nevertheless his up-to-the-minute compositions are the theme of conversation everywhere; banquets, forum, temples, cross-roads, porticoes, shops are full of Martial's praises. His fame has reached Gaul, Britain, Spain, aye all the ends of the earth. He cannot stir out of doors without meeting with that digitmonstration which tickled Horace and Pliny, but vexed Vergil. Martial himself endured it cheerfully. He was never the bashful recluse.

In many respects the epigrams are a prototype of certain newspapers. Martial's editorial motto would have been: "All the news that is not fit to print." In the parlance of our day, red and yellow were the colors that he saw; sensations, unusual and comical mishaps, dreadful diseases, crimes of lust and bloodshed, suicides received his reportorial attention. This put his books among the "best sellers," even though they may not have been sold to the best. Let us see how the present is but duplicating an age almost twenty centuries dead. And first we may consider some accounts that would have found their way into the accident columns of our city dailies.

The fall of a portico just missed killing a leading lawyer of Rome, Regulus, whom some will recall as the one person whom Pliny the Younger could not endure. The escape may have been a disappointment to Pliny, but it called for several poems of rejoicing from Martial, to whom Regulus was a benefactor. He was in fact the man to whom our poet indited that model for all demands for a present: "Regulus, there isn't a cent of money in the house. The only thing left for me to

do is to sell your gifts. Are you going to buy?" If that appeal did not draw something, the lawyer must have been beyond the reach of the beggar's art in any form.

Then, can we ever forget Martial's story of the monstrously fat Gaul? While the unlucky fellow was returning one night to his hired lodgings, he stumbled and falling poured his great person all over the ground. He had only one attendant, such a lean little slave that he could with difficulty carry the smallest of handlamps to light their way. Since the Gaul could not move and the runt could not lift him, he was in despair until four miscreant slaves happened along bearing a bier with a corpse on it. Deferentially the poor midget besought these outcasts to carry his master anywhere they pleased as a dead man. So they discarded the real cadaver and hoisting the Gaul bore him off, God knows where, his bulky body overlapping the bier on all sides helplessly.

With equal zest Martial writes of the mishap that befell a small boy who, passing a statue of a bear, playfully thrust his hand into its jaws, only to have a viper lurking inside sting him to death with poisonous bite. "What a crime," exclaims the poet, "that the bear was not a real one!" A still stranger accident befell the youth whose throat was cut by a falling icicle, which the warm wound then melted away into harmless liquid. "Where is death not present," the poet asks, "when, water, even you cut throats?"

Bizarre shows in the arena are also favorite topics: the bear that becomes entangled in bird lime, a new use of the fowler's art; the she-boar delivered of her young by a hunting spear, a verification of the mythological story that Bacchus was born of Semele through the riving of a thunderbolt sent by Jove; the bull which after he had tossed a ball of straw, made the mistake of his life in rushing at an elephant and attempting to hurl him heavenward as lightly as a dummy. A wearisome number of times Martial tells us of the hare that frolicked through the jaws of a lion unharmed by the disdainful king of beasts. Then we have such spectacles as the harnessing of impossible animals, elephants dancing on a tight rope, a lion

and a he-goat living together amicably and both dining on lamb, fish swimming up at the call of their name and licking their master's hand. Much of this would make good journalistic copy in 1918.

Certain epigrams that attack public abuses and annoyances would now appear as letters under the heading: "Communications from our Readers." Thus, in more than one poem of protest he describes the horrors of an epidemic of kissing that prevailed in Rome. He tells his friend Flaccus that there is no escape from the kissers. They press upon you, hold you up, pursue you, run to meet you from every possible direction. No facial blemish protects you from osculation, nothing that you can put on your mouth. Neither heat of summer nor cold of winter can save you. It is all in vain that you hide your head in a hood or ride in a closed litter or sedan chair, the kisser will come through the cracks and crevices. Even occupation of the highest offices of state does not exempt you, the lictor cannot drive away the pestiferous osculators with his rods. As a judge upon the tribunal you may be laying down the law; up the steps will come the kisser with his inevitable smack. You may have a fever, be weeping or gaping or even be in swimming, he will kiss you. There is but just one remedy for the affliction and that is to make a friend of everybody whom you would not care to kiss. A friend will lack the sycophant's motive for making a show of affection. The chronic whisperer is another type of nuisance whom Martial would squelch by publishing his description in an epigram that the whisperer's victims could use against him.

Then we meet the shopper the like of whom has tried the patience of every clerk in our great department stores more than once. Mammura makes the rounds of the best establishments in the shopping districts of "golden Rome." He inspects the costliest furniture, has the salesman hand down heavy pieces, takes careful measurements, complains that the size is wrong, tests everything suspiciously, disparages the most perfect works of art, has the clerk set aside ten several objects as sold, makes offers for precious wares that he would

never buy and finally, all worn out himself, he purchases a couple of mugs for a penny. Today he would "have them sent," but two thousand years ago it was an equal impropriety not to have a slave carry your parcels, no matter how petty, and so Mammura took his home in his own hands.

A useful exercise for a teacher whose faculty of imagination has not been blighted by an exclusive pursuit and adoration of facts is the attempt to bring back the ancients into a modern environment, and then conjecture how they would react to it. Martial would be one of the liveliest of remonstrants. For instance, he would object to the hurry and racket of many of our supposedly indispensable inventions, since he loved leisureliness, silence and sleep, but most of all the ethical standards to which modern society pretends would turn him mentally topsy turvy. How could we ever explain to him the present reputations of, let us say, Napoleon, Mary Pickford, the black prize-fighter Johnson, Oscar Wilde, Von Hindenberg, "Billy" Sunday and Miss Rankin? Whom among these would he eulogize, rehabilitate or lampoon? When it comes to types, our guesses are less venturesome. The predatory sort of philanthropist he would certainly let alone; for there would always be a chance that some of the tainted plunder would descend ultimately into his own unquestioning hands, especially if he celebrated the gentleman's reformed activities by a poem or two. On the other hand, he would assuredly satirize the poker-playing judge who fines the Chinaman for his Sunday game of fantan, the woman reduced from genteel idleness to honorable toil who takes "paying guests" instead of boarders, girls and would-be girls who hide a dubious respectability beneath a veneer of rouge and powder, people who over their wine cups rejoice at the abolition of the saloon, not to speak of the Professor of Latin who has the impudence to portray persons long dead and defenseless, and more particularly a temperamental poet.

Easiest of all would be to imagine some of the places where a resurrected but unreformed Martial would feel at home, places of entertainment for the most part. Towards athletics

he was not quite so sympathetic as young America would demand. Thus, he lauds a certain Atticus for devoting himself to peaceful seclusion and to the study of oratory instead of emulating other youths who were learning to box at the cost of theirs ears and wasting their money on the anointer who "rubbed them down." This model youngster avoided the usual hardy exercises which prepared one for the bath, ball games, fencing and wrestling, and merely took a run; in other words Atticus played croquet instead of football, as our poet himself, we may be sure, would have done.

But however averse Martial may have been to participation in manly sports except, it would seem, fishing and hunting, we could count upon his being at any rate a regular attendant at all our intercollegiate and professional contests, whereat the spectator exercises all other parts of the body by proxy except his lungs. The games of our track, gridiron and diamond would bring back to him those wild days in the Circus Maximus when he had yelled himself hoarse and betted himself poor over the red or the green or the blue or whatever color the jockey wore whom it was fashionable at that time to back. Presumably an intercollegiate football match might have passed with him as our most exciting substitute for the wild beast hunts in the arena and the gladiatorial games which had once thrilled him with a delicious horror, but you would have had to apologize to him for the fact that our padded heroes can only partially kill one another: a gladiator fought to the death.

Such of our stage entertainments as barely but lucratively escape the ban of the censorship might also please his taste, especially those which introduced material splendor and pageantry of which the Italians have always been inordinately fond. The ethics of the theater would, however, be especially enigmatical to him. The Romans seated their most sacred priestesses, their nuns, you might loosely call them, the Vestal Virgins, in a box. The occupants of our boxes would not seem like priestesses to Martial. They might even shock any Roman sense of propriety that was discoverable in him. Nor would it be at once apparent to his inquiring mind why

such operas as for instance Parsifal are permitted, while so many stage plays are barred. You would make clear to him, if you could, that the word "grand" before opera acts as a conscience muffler, that singing a vicious rôle takes the curse out of it, and that Neptune's Daughter, for another example of our phenomenal inconsistencies, is all right in the movies, but would have to do some dressing for the stage. But alas! in the final analysis Martial was a man who saw most disconcertingly straight and called things by their right names, so that our American morality or, at any rate, its censorship might receive from him in a moment of veridical impoliteness some caustic and provocative epithets. "If you still have a replica of our Floralia, the Games of Flora, for whose patrons I used to write my epigrams, why," he would exclaim, "be so hypocritical about it! You are worse than Cato!"

If I had to pick out Martial's most attractive quality, I should say that it was his hatred of shams. He had the keenest perception for pretense and imposture, no matter how they might be disguised, and he made the hypocrites, charlatans, braggarts, prudes and social climbers of Roman society more than uncomfortable. Although he proclaims it to be his rule *parcere personis, dicere de vitiis,* "to spare the man but denounce the vice," he was never so impersonal that the guilty could not apply his lessons.

The type corresponding to our contemporary pharisees and to certain fanatical religionists whom no age or clime escapes was in his day the philosopher whose ethical speech and outward demeanor but ill accorded with his secret life and thought. Thanks to our poet's vivid word painting we can still see him, his locks unkempt, his brow so melancholy as to inspire terror, ever expatiating upon the noble men of Rome's austerer past, although himself given to unspeakable viciousness. Again, the epigrammatist brings upon the boards a Stoic. His philosophic sect had made suicide almost a fashion in spite of the handicap that its follower could do the laudable act only once. "But the Stoic's love of death for which he courts public applause is all due," says Martial, "to nothing

but his indigence. It is virture inspired by a broken-handled pitcher, a fireless hearth, a mat and a bare but bug-inhabited bed to sleep in, a toga which serves as a robe by day, a night shirt by night. Make him rich and he will yearn for the years of Nestor (the Greek Methuselah) and grieve, if he loses a single minute from each passing day."

Martial lived in an age when sudden changes of social and financial standing were common and when sow's ears came as near becoming silk purses as they ever will. He exposes the absurdities of the ostentatious nouveaux riches as humiliatingly as he can, because he himself was never either newly or in any other way rich, but saw no reason why Mammon should have thus neglected him. He resents the amethystine robes, the long-haired page boys, the retinue of clients which uppish freedmen flaunted in the streets of Rome. A litter borne on the shoulders of six or eight giant slaves had the same effect on him that the limousine still has on those who are cursed with an unintelligent envy. He tells Avitus that Philippus rides in one which requires eight bearers, although he is perfectly sound of body. "But if, Avitus, you think him sound of mind, you are yourself unsound." When the fop Zoilus leaves the table not fewer than eleven times in order to change his dinner mantle for another on the score that perspiration is likely to cause him a chill, our author assures him that he doesn't perspire; the possession of but a single dinner mantle keeps him quite cool. It is the same Zoilus, if the name means anything, who falls ill merely that he may exhibit to his callers his superb bed-clothing. "Dismiss the doctors," urges the poet, "and take my bedding in exchange; that will cure your fever."

The social "would-be" who decks himself in dazzling elegance that he may pass himself off as a knight and sit in the seats at the theater which were reserved for those Roman capitalists, calls forth several fine epigrams. The discovery of such impostors and their humiliating ejection from the playhouse by some usher did Martial's equestrian soul much good.

Our dissector of social humburg was also quick to identify tears of the crocodile variety and such mourning as was only

camouflage for inward rejoicing. The man who "marries a cough," or who, fishing for a legacy, baits his hook with presents to the rich and ailing cannot escape his discerning satire. Legacy-hunting was a popular occupation in his day and being the right sort of humorist Martial does not hesitate to tell on himself a joke, probably fictitious, to the effect that a dying millionaire all but lay in his coffin, wrote him down as an heir and then had the impudence to get well after all.

The poet also exposes mercilessly all impositions practiced with the help of paint, powder, pomade, perfumery or the like. The bald-headed man who paints in his hair and so never needs a barber to shear him but merely a wet sponge to rub off his scalp, and another who gets himself counted thrice at a distribution of food because bountiful patches of hair on each side of his baldness seem to triple his head and make a Geryon out of him are among his victims.

The epigrammatist knows more about women than any man should know—aye, more than any woman should know—and particularly about the woman whom you and I should not care to know. He must be matched with Ovid as a connoisseur of cosmetics and as a critic of their use and misuse in the boudoir. He would not allow his contemporaries even the paucity of comfort that they could derive from wearing false teeth in an age when dentistry was still in its infancy, but he had the bad manners to notice such teeth and count them and say that they were indeed the owner's own beyond any question because forsooth he had bought and paid for them. False hair and effaceable complexions of all colors he recognized on sight. He vivisects ruthlessly one poor woman whose exterior largely consisted of embellishments which she had purchased in various beauty-parlors and which, when bedtime arrived, she had to lay aside along with her clothing, so that really there was but little left of her to go to sleep.

But I am sorry to say that our satirist also directs his shafts of ridicule against natural defects as well as against those that had been acquired, against what was incorrigible as well as against what could be corrected. Thus, in a rather unfeel-

ing spirit, he caricatures the ugliness to which some persons are born and to which all, if they only live long enough, will surely attain. In this, however, he is but a typical product of his age and race. The very names of the Romans are often nicknames signalling some physical abnormality for which the Italians to this day have an uncanny discernment. At times Martial pictures the homely with the abominable accuracy of an untouched photograph but more often he does worse by anticipating our American style of humor and exaggerating. So we have Vetustilla who has lived through three hundred annual consulships but possesses just three hairs and four teeth. She has the chest of a cicada, the legs of an ant, also the complexion. Her forehead exhibit more wrinkles than a woman's outer tunic, her bosom resembles a spider's web, the jaws of a crocodile are small compared with hers—I trust that you are forming a mental picture of this paragon of ugliness—the frogs of the Ravenna marshes are more melodious than her chatter, the Atrian gnat sings a sweeter song. Her eyesight is no better than that of an owl in the morning, her person has the redolence of the goat, her loins resemble those of a lean duck. The bath-house keeper will not admit her until he has extinguished the lights. It is winter with her even in the month of August. Not even a fever could unfreeze her. And yet she yearns to marry.

But I must spare you his other personalities, even though they are often so cleverly offensive that we can forgive him. The only worthy excuse that we can offer is that he shared with the ancient Greeks an untenable belief which is even now not unknown among the goodlooking that good looks indicate virtue, bad looks vice. "Red haired, black of face, stumpy-legged, with an injured eye, you show the world a prodigy, Zoilus, if you are a good man." On the other hand, the poet had no patience with the dude. A pretty man was to him no man at all, and he limns him for us with an affectionate craftsmanship that has left real men his debtor for all time, his curls, his perfumery, his attitudinizing and idling among the ladies, his minute mastery of amatory gossip.

Living himself a life of active idleness, at any rate in his periods of good luck, Martial appears to us a little severe when he concerns himself with those about him who really worked, and not merely begged, for a living. The medical profession of his time was largely in the care of slaves and freedmen. From our epigrammatist it receives no compliments and perhaps deserved none, although he seems at times to have had need of it for his own health's sake. Of one physician who had become an undertaker he says that he is only continuing the same old job. Similarly, the ex-oculist who is now a gladiator still puts out eyes. Andragoras merely dreamed of his doctor and was found dead the next morning. Even in those days medical professors brought their students to the patient's bedside for clinical instruction. Martial was slightly indisposed and sent for Dr. Symmachus, who came with a hundred students. "One hundred hands, frozen by the north wind, felt my pulse," complains the poet. "I had no fever, Symmachus, but I have one now."

Lawyers also had to smart from his causticity, those who refused to be retained in cases against the rich or powerful, or who pretended to be legal lights without being able even to pronounce their Latin correctly, the pleader engaged to recover three goats stolen by a neighbor who delivers eloquently a wholly impertinent oration, and the other type of lawyer whose capacity for taciturnity is so phenomenal that he delivers himself of just nine words in the course of ten hours.

So far as my own profession is concerned, Martial once almost anticipates the propaganda of certain pedagogical sciolists of today in their advocacy of vocational studies. Lupus had been worrying about the choice of a teacher for his son. "Avoid all grammarians and rhetoricians, I give you fair warning," says the poet. "Let him have nought to do with the books of Cicero or of Vergil. . . . If he makes verses, disinherit the poet. Has he a desire to learn arts which have some money in them? Then let him become a professional musician. If he seems to have an intractable mind—*durum*

ingenium, the Latin for "bone-head"—make him an auctioneer or a master builder."

The epigrammatist refused to take seriously either philosophy or religion. In fact he had a lifelong antipathy for anything that was exacting or disquieting. It was all that he could do to dodge the bedevilments of this world. He would not worry about a Tartarus in the next. He was not like Tibullus, for instance, who in thought constantly travelled through the Valley of the Shadow of Death and apparently got a sort of sombre pleasure from it. Martial did not like death. He loved life and he is ceaselessly urging its enjoyment. Live it to the full each day: *carpe diem* is the maxim he would have us follow. So already in midlife we find him writing: "Believe me, it is not the part of a wise man to say 'I am going to enjoy life.' Life tomorrow is already too late. Live to-day." And some four years later he upbraids Postumus: "You will live tomorrow? Why it is already too late to live today. He is a wise man, Postumus, who lived yesterday." And more than once in his praise of pleasure you might imagine him Epicurus or Omar Khayyam. "If you are wise," he advises his reader, "have your hair ever-glistening with Assyrian ointment, your head crowned with wreaths of flowers, your bright crystal cups dark with old Falernian wine, your soft couch warm with the caresses of love."

Of course, outwardly at least Martial conformed to the religious beliefs and usages of the orthodox. Occasionally he even seems to have a modicum of faith in the efficacy of prayer and sacrifices. But he treats little as sacred except the emperor Domitian and whatever pertained to him. This monster of iniquity insisted on being addressed in both speech and writing as *dominus et deus:* "Lord and God" and Martial lorded and deified him without scruple. Aye, he did not hesitate to compare him with the supreme god of all and to make Jupiter the loser in the comparison. No wonder if with such an attitude towards his national religion he is constantly reminding us of the merry sceptic Lucian, who is one of the most beguiling of Greek writers. But if not religious, Martial

is also not superstitious. I can find but few traces of this mental weakness in all his fifteen hundred and seventy-five epigrams. He envisaged the world of spirit with as few illusions as he did the world of humanity all about him.

As a poet he subscribes, of course, to the conventional topography and peopling of the land on the other side of the grave. Dis and Proserpina rule a silent realm of gloom which is watered by the Styx and by Lethe, the River of Forgetfulness. The latter figures so often in Martial that one wonders whether forgetfulness in the next world did not appeal to him as much as sleep evidently did in this. The entrance to the Lower World was guarded by the monstrous hell-hound Cerberus. Man makes the trip as soon as the Fates have spun and severed the black thread of his existence. The poet also mentions the punishments of the penal colony over which Judge Æacus presides—as near a hell as Classic imagination conceived—and in one poem consigns there whoever has injured by wicked verse the pure and innocent of either sex, but he prefers to write of the happier grove and fields that bear the name Elysian. There, in what is often termed loosely the heaven of ancient theology, Martial, as we learn more than once, expected to find his own eternal home. Even a humorist can sometimes lose his sense of humor.

While Martial's portrayal of private life and character makes him of inestimable value to the historian of civilization, he has little to offer to the student of politics and military affairs and some of that is patently untrustworthy. In general he is as safe and discreet as a German government organ in wartime. As a professional eulogist he accomplished, indeed, for Domitian unblushingly more than Teutonic efficiency has been able to achieve for the German Crown Prince. Under his skilled pen ignoble campaigns become triumphal progresses and the emperor a hero such as he could not have seemed to himself even in the most unreal dreams of sleep or of ancient Falernian. Flattery of the ruler was, of course, required both by court etiquette and by universal custom and we must not be too severe against our poet for his success in

blandiloquence. There are still lackies out of livery who hail as His Highness sometimes a very low character, as His Grace a most graceless worldling, as His Honor a notorious rogue, as His Excellency some one whose excellence falls short of that of even Domitian himself in some rare moments of his reign.

It is no doubt as a client that Martial cuts his sorriest figure, but some of the blame must be attached to the system which he portrays for us with such masterful skill, and he certainly got his punishment as he went along. To rise before the sun, plod the rough and muddy streets of Rome to your patron's house, attend his morning reception in the full dress that irked your very soul, then escort his litter to the forum, there to bellow your hypocritical applause of all he said in the law court or on the rostra, then to dance any other attendance on him that he required, all for the dole of a pittance or for fortuitous invitations to thoroughly snobbish dinners at his house, feasts that often proved to be merely Barmecidal for the humbler guests, all this might well have soured a less amenable nature than our poet possessed.

Martial's likes and dislikes, his ambitions and disappointments, his amusements and labors are candidly set forth in his pages. Some may like to correct the lecturer's misjudgments on the basis of such utterances of the victim himself as we have in the following: "The things that make life happier, most charming Martialis, are these: property which you have not had to acquire by toil but that has been left you as a legacy; a farm that is not ungrateful in its returns; a kitchen fire that is always burning; no law case ever, a dress suit only on rare occasions, a mind at peace; a gentleman's muscle, a healthy body, frankness which is at the same time careful of the feelings of other people, candor that is open-eyed; congenial friends, easy-going social intercourse; a plain table, nights not passed in drunkenness but yet at the same time freed by wine from cares; a marriage-bed chaste without being austere; sleep that makes the darkness pass quickly; a wish to be what you are and no desire for another's lot in

preference to your own; no fear of one's last day nor any desire for it."

In another poem he tells us that he could be content even in god-forsaken Butuntum (a hamlet in Calabria), provided there were a butcher, a baker, a wine-seller, a bath establishment, a game-board and men, a few books of his own selection, a reasonably cultivated friend to chum with, a pet slave and the slave's sweetheart. To the well-known author Quintilian he writes to this effect: "Nobody is in sufficient hurry to enjoy life. . . . I take delight in a hearth and ceilings that do not resent the black smoke of the fire, in a fount of living water, in grass that is left uncut. May these be mine: a well-fed, home-born slave, a wife who is not excessively learned—he like Juvenal dreaded any woman who was educated beyond her proper marital inferiority—nights of sleep and days free from strife." Again he tells us that if he should be free to live the life of his choice with his dear friend Martialis, a real life that was void of worry and full of leisure which he could dispose of as he pleased, he would have nothing to do with the halls of the great and with the litigious forum, but would enjoy riding, story-telling, books, the Campus Martius, where the Romans exercised, shady places, the water of the Virgin Aqueduct, the public baths.

And now we must part with Martial and with my selection among the fools and rogues who inspired him to inimitable epigrams. His Vanity Fair, of course, contained many more characters than I could produce in my allotted hour. Fatuous lovers, usurers, misers, spendthrifts, kleptomaniacs, the woman who has a birthday eight times a year, gossip mongers, whom he aptly terms "sellers of smoke," the rhetorician whose work was so frigid that his very appearance in an overheated public bath would lower its temperature adequately, the painter who in his painting of Venus seems really to have been paying court to her rival Minerva, the glutton who cherishes a cough in order to enjoy an unending succession of tidbits presented by sympathizing friends, the man who may well be suspected of having burned down his own house because the charitable

give him more than its value in gifts, barbers, peddlers, snake-charmers, beggars, strolling poets whom has he overlooked in his picture gallery, or, if you will, his rogue's gallery? If you turn to his pages and read them from now on with a little extra interest, my slight sketch will receive the only reward that it seeks and probably more than it deserves.

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